Standardizing Patient Handoff from the Emergency Department to the Stepdown Inpatient Unit

by

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Abstract

The standardization of the patient handoff has become more imperative with the ever-increasing implementation of the electronic health record. An area especially vulnerable for patient handoff failure is from the Emergency Department (ED) to a Stepdown Inpatient Unit. Based on two sentinel events in the community hospital , a quality improvement project was implemented to standardize the handoff tool used in the electronic health record, improve the nurse's perception of the handoff process and decrease the time from ED bed assignment to arrival on the stepdown inpatient unit (SDIU). A lean process was used to analyze and evaluate the current process and implement the use of the electronic situation, background, assessment, and recommendation (eSBAR) tool. The findings were negligible with no improvement in the nurse's perception of handoff, or time from the ED bed assignment to arrival on the SDIU. There were several gaps in utilizing the eSBAR tool, including each inpatient nurse, was required to add the handoff tool to their summary page manually. After completing the implementation of the project, the existing eSBAR needed further refinements, and several recommendations were made to the health care system.

Key words: Electronic SBAR; eSBAR; Emergency Department; Handoff; Lean Process; Patient Handoff

Table of Contents

Chapter One: Overview of the Problem

The patient handoff was recognized by the Joint Commission (TJC) in 2006 as a national patient safety goal after it was identified as a leading cause of sentinel events. Communication breakdown resulting in patient care errors continue to be among the top leading cause of medical errors. The Joint Commission recognizes that a standardized handoff with the opportunity for the receiving clinician to ask a question without interruption is the best practice (TJC, 2017). As defined at TJC Center for Transforming Healthcare (2014), patient handoff is the receiving of the responsibility of patient care accomplished through effective communication from the sender.

One area that creates an ever-greater risk for patient handoff failure is from the Emergency Department (ED) to Stepdown Inpatient Unit (SDIU). Hilligoss and Cohen (2013) identified the complexity of the handoff process between the ED and SDIU, noting the factors that complicated the handoff included patient acuity, lack of awareness of the different unit's cultures and control of patient movement. This movement is unpredictable and out of the control of the ED Nurse. McFetridge, Gillespie, Goode, and Melby (2007) found that collaboration practices and a structured framework would result in less patient care errors and more knowledgeable transfer for the patient between ED and SDIU nurses.

The purpose of this paper is to evaluate and standardize the nursing handoff process of the ED patient to the SDIU. A quality improvement (QI) project using the lean principles was conducted with an anticipated outcome of shortening the length of time it takes to transfer the patient out of the ED and increased standardized communication between nursing staff. Through this lean process and evidence-based practice (EBP) research, the best practice was disseminated to the staff.

Background Information

Handoff essentially means to pass the control of something from one to the next. In healthcare, we equate handoff to transferring care of a patient from one clinician to the next. The types of handoffs found in the hospital setting are a nurse to nurse intra shift, physician to physician shift changes, unit to unit transition, and the process of admissions and discharge of the patients. The handoff from the ED to the SDIU is considered a unit to unit transfer and for this QI project will be called interdepartmental handoff.

One would expect that there would be more similarities in interdepartmental handoff to shift to shift handoff, but Hilligoss and Cohen (2013) recognized that there are multiple differences in the interdepartmental transfer of patients. The triggering event for transfer is often related to the change in the patient condition, either becoming stable or declining. Bunkenborg, Bitsch-Hansen, and Hølge-Hazelton (2017), in their study of Intensive Care Nurse handoff to the SDIU, found that there are communication and collaboration difficulties when transferring patients to a different level of care. There is movement across organizational boundaries, the unit to unit, as well as differences in each unit's cultures. Also, during the handoff, the negotiation and coordination are very different from unit to unit than intra shift handoffs, increasing the likelihood of errors. Lockwood (2016), in the search for evidence-based literature, recognized that inaccurate or untimely handoffs are associated with adverse events.

In 2004, the Agency for Healthcare Research and Quality (AHRQ) created a survey to measure the perception of safety by the staff. The survey currently measures 12 dimensions of safety. Those 12 dimensions are communication openness, feedback and communication about error, frequency of events reported, handoffs and transitions, management support for patient safety, nonpunitive response to error, organizational learning-continuous improvement, staffing,

overall perceptions of patient safety, manager expectations and actions promoting safety, teamwork across hospital units and teamwork within units (AHQR, 2018).

The survey, Hospital Survey on Patient Safety Culture (HSOPS), is used to measure staff perception and is given voluntarily by hospitals across the US. The aspect of handoff and transition is measured through four statements where staff rate, through Likert scale responses, how they perceive their hospital is performing. Two of the statements are shift to shift patient handoff statements, while the other two are related to unit to unit handoffs (AHRQ, 2018).

TJC Center for Transforming Healthcare began a targeted solution in 2009 to study the handoff communication. Ten hospitals collaborated to examine their handoff communication processes and identified failures and barriers to successful handoffs. From this initiative, it was found that most organizations have a culture that does not promote successful handoffs and do not include the support of teamwork. This culture created differing expectations from nursing units with different methods of communications, multiple interruptions while reporting, lack of standardized procedures, and lack of coordination (TJC Center for Transforming Healthcare, 2014).

One handoff tool used for consistency is the situation, background, assessment, recommendation (SBAR) tool that is embedded in many electronic records. The SBAR was created by the military to organize thoughts during a crisis and then developed for healthcare by Kaiser Permanente in 2002 (Leonard, Graham, & Bonacum, 2004). Panesar, Albert, Messina, and Parker, (2016) studied the impact of the integrated structured SBAR notes on crucial communications from clinicians in the pediatric intensive care unit. The SBAR note suggested an increased frequency of events documented and completeness of documentation, but the study did not show any relation to improved communication.

Stewart and Hand, (2017) in their systematic review of the SBAR framework concluded that tools such as the SBAR were an effective tool for multidisciplinary communications, but the tool alone cannot improve patient handoff. Hilligoss and Moffatt-Bruce (2014) showed that implementation of a checklist must have social and organizational changes or risk little change of behavior. Hilligoss and Moffatt-Bruce (2014) also noted that checklist like the SBAR could give staff a false sense of safety and therefore, be misused.

Significance of Clinical Problem

Handoffs happen multiple times a day in the hospital setting. TJC (2017) estimated that two-thirds of sentinel events per year are related to communication errors, including handoff. David et al. (2013) estimated that the total cost of medical errors was over one billion dollars for the United States, with the median cost being close to $1000 per patient. Lockwood (2016), in a review of best nursing handover style, found there is very little research on best practices of handoff and patient outcomes. Ong and Coiera (2010) in a prospective observational study between SDIUs and radiology, found that transfer errors with handover were noted 43% of the time. Poor communication on handoffs led to inadequate infection control practices and poor patient identification checks.

The measurement of the 12 dimensions of safety, as defined by AHRQ, shows that patient handoff and transition consistently scored lowest in perception by the staff of all dimensions across the nation (AHRQ, 2018). A community hospital in eastern North Carolina completed the HSOPS survey in 2016, and hospital staff scored handoff and transition perception in the lower tenth percentile. In that same hospital, two sentinel events happened between 2016 and 2017 regarding handoffs from the ED to the step-down unit (J. Ragel, personal communication, June 3rd, 2018). One area that created both sentinel events were patients that

were in the ED for greater than four hours and then transferred to the SDIU. The longer the patient remains in the ED, the greater the opportunity for orders and procedures to be missed, and for the breakdown in the handoff process.

Question Guiding Inquiry

Developing the QI statement requires a clearly stated and well-researched question. As a research question, the population, implementation, comparison, and outcome or (PICO) question is used to determine best practice. When developing the PICO question, the (P) can be the population that is defined, the patient or the process of interest. The (I) is considered the intervention but as can be the best practice in the literature. The (C) is referred to a comparison group, and the (O) is the outcome or the effect of interest (Hastings & Fisher, 2014). The PICO question guiding this EBP QI project asked; "*Does increasing nursing perception of the patient handoff process of patients in the ED decrease the time from bed assignment to arrival on the SDIU, decrease the number of safety events on the receiving unit and increase the nurse's perception of positive patient handoff?"*

Population. The targeted population for this evidence-based project was ED nursing staff who care for patients that are in the ED and are being transferred the SDIU. The additional population is the nurses that are receiving that patient on the SDIU. Both of these populations bring a unique aspect to the handoff process. The ED nurse is the sender of the information, while the SDIU nurse is the receiver.

Intervention. To redesign the electronic SBAR (eSBAR) handoff process, the use of lean methodology was incorporated. A redesign team consisting of ED and SDIU nursing staff and a trained lean facilitator was formed. The eight steps used in the A3 methodology was followed (see Appendix A; UNC Health Care, 2016). Step one, the reason for action, identified

the problem and issues that lead to the errors. The second step, the current state, assessed how the handoff happens today looking for inefficiencies and waste (Kimsey, 2010). The concept of information waste, what is the right information, will be introduced to help the team design the most efficient handoff process without sacrificing patient safety (Campbell, 2009). The third step, target state, identified the process that was used and the metrics for measurements that were obtained during implementation (Kimsey, 2010). A new electronic health record (EHR) was implemented in September 2018 that included an eSBAR. The redesign of the eSBAR process utilized in the organization's newly implemented EHR software was evaluated during this step.

The fourth step, a gap analysis, allowed the team to compare the current state and future state to identify barriers. Step five, the solution approach, is the doing step of the process. This step creates the guideline of implementation. The last three steps, rapid experiments, completion plan, and confirmed state was utilized after the implementation. The team re-evaluated their completed solution and made changes to their redesigned process. The lean implementation team implemented the new handoff process of ED patients for 30 days before collecting data. The team revisited the process solution and made incremental changes and measured again in 60 days. The QI Project Manager using the Iowa Model of EBP developed the problem focus triggers, and knowledge focused triggers from the review of the literature to guide the implementation team on the best practices of the handoff process.

Comparison. There was no comparison group. However, the decision of bed assignment to arrival on the SDIU was compared pre and post-implementation. The handoff questions from the 2016 HSOPS survey were used in a pre-implementation survey and post evaluation of the new handoff process (see Appendix B; AHRQ, 2018). The final comparison data was the reported safety events six hours post transfer of the patient from the ED to SDIU.

Outcomes. The ultimate goal was to increase standardized communication between the ED and the SDIU nurses; therefore, increasing the safe handoff of the patient. These types of interventions can decrease the number of safety events related to poor communication and by improving the timeliness of patient transfer from the ED to the SDIU. The final outcome was the increased positive perception of the staff of patient handoffs within the community hospital as measured by HSOPS.

Summary

Miscommunication of orders, procedures, and delays in transfer due to inconsistent handoff by the nursing staff increases the risk of patient harm. Using QI tools such as the lean methodology along with eSBAR utilization, the nursing staff can define the handoff process, eliminate unnecessary steps and miscommunication, and identify what is important to communicate during the handoff. Recognizing that handoff is a critical time for the patient and improving the process, nurses can save critical time for both themselves and the patient.

Chapter Two: Review of the Literature

Standardizing the patient handoff and communication is vital in decreasing the risk to patients during the transition of care. Failures in communication during the movement of the patient from the Emergency Department (ED) to the Stepdown Inpatient Unit (SDIU) continues to be problematic. This chapter details the methodology and findings of the literature review. The goal of the literature search is to find evidence-based practice (EBP) research that would assist in the quality improvement (QI) project of standardizing patient handoff from the ED to SDIU.

Methodology

Inclusion criteria. A literature review was conducted to recognize research supported by EBP associated with interdepartmental transfers using the following databases, Cumulative Index to Nursing and Allied Health Literature (CINAHL), PubMed, ProQuest, and Cochrane Library. The searches within CINAHL and Medline had limiters that included being peer-reviewed and written in the English language. The years searched were specific from 2013 to 2018.

In CINAHL, PubMed, and ProQuest using key terms "handoff, (Patient Safety)" or "handover" and "transfer, intra-hospital" and “emergency services” and “communication” were searched. The CINAHL search yielded 46 articles. Of those 46, 12 were relevant to this project and reviewed with the inclusion of two. PubMed produced 150 articles, with 23 reviewed and two relevant articles included. ProQuest search found 64 articles, 15 reviewed, and one article was included. The review of the Cochrane Database of Systematic Reviews generated one systematic review.

Evaluation criteria. Melnyk (2016) described using levels of evidence to evaluate for validity, reliability, and applicability when reviewing research. The seven levels of evidence are level one systematic review of randomized controlled trial (RCT), level two a RCT, level three a controlled trial without randomization, level four case control or a cohort study, level five systematic review of qualitative or descriptive study, level six a qualitative or descriptive study and level seven an opinion or consensus article. Using the seven levels of evidence developed by Melnyk and Fineout-Overholt (2015), each article was reviewed for the applicability to the clinical question and then for the strength of existing evidence. From that review, six articles were included (see Appendix C).

Literature Review Findings

After the review of the literature, the articles were evaluated for common themes, conclusions, and EBPs. There were two themes that were consistent in the review, standardization, and communication. The Joint Commission (TJC; 2014) recommended in their evaluation of the patient handoff the use of standardization tool. Most evidence revolved around tools to accomplish the standardization with two articles that included electronic health records (EHR) data and the electronic situation background assessment and recommendation tool (eSBAR). The second theme, communication, is multifaceted, and the research regarding handoffs and communication is new. These two themes are reviewed in the following sections.

Standardization. Stewart and Hand (2017) completed a systematic review detailing the use of SBAR framework to determine the usefulness during patient handoff communication. Stewart and Hand used a combined search with the terms, SBAR, communication, and patient safety to find articles that relate to SBAR. Stewart and Hand then eliminated articles that were not pertinent to handoff and only included the years between 2012 and 2017. The review

discovered 17 articles with four primary themes identified. The first theme is the use of SBAR creates a common language for communication. The next theme revolves around the nurse's perception. The use of the SBAR builds the confidence of the sending and receiving nurse by establishing a consistent way for communication to be performed. The use of the SBAR also makes the handoff more efficient and effective. Moreover, the final theme, the SBAR improves the perception of staff's communication and is well received among healthcare staff.

Bakon and Millichamp (2017) developed a handoff tool from the ED to inpatient in a regional hospital in Australia. This study looked at the inconsistencies in the use of a checklist by the ED nurses and created a collaborative project to develop a more consistent handoff tool. The researchers used a five-step mixed method approach of focus groups and key stakeholder involvement. The form was formally introduced in the ED. A formal evaluation tool was used to gather feedback. Feedback was given from the following clinical areas: pediatrics (14.3%), surgical (14.3%), cardiology (7.1%), medical (10.7%), geriatric (14.3%), and emergency (35.7%). The evaluation form results showed that 83.4% agreed or strongly agreed that the content of the form was appropriate for its purpose. Sixty-eight percent believe the form would improve the handover process. Respondents (64%) believed the form would assist in maintaining patient safety and clear and easy to navigate; while 79.1% believed the form was appropriate for handover to a range of different units. Only 28% responded that the form was too specific or too in-depth (Bakon & Millichamp, 2017).

In this study, the form was developed and implemented for a specific purpose, and therefore, the results are in direct relationship to how effectively and efficiently it was deployed. The five-step framework insured expert content review and standardization among staff. In the audit of the tool areas where participation was low included the patient in the treatment plan and

social concerns. This is one area for improvement, including the patient in the handoff process. It was recognized that environmental factors in the ED hinder the ability of the nurse to have an effective handover. Despite barriers, the results show that standardize handoffs assist the nursing staff in providing effective and complete handoffs (Bakon & Millichamp, 2017).

Limitations of this study had lower-than-expected participation from the ED staff, and only one site was used. The other limitation was very little demographic data was collected about the nurses that responded. One limitation that was not noted in the study was the education of the emergency department staff. There should have been more collaboration between the ED and the inpatient unit and how to use the tool. This sending and receiving information is imperative during handoff (Bakon & Millichamp, 2017).

Potts, Ryan, Diegel-Vacek, and Murchek (2018), developed a handoff process using the eSBAR to improve patient flow from the ED to the inpatient units. Using a quality improvement initiative, Potts et al. measured the time the patient was ready to move until they reach the inpatient unit. The eSBAR bar within their EHR was identified as the standardized tool to be utilized by the ED and inpatient during patient handoff. A major change in their process included the option of the inpatient nurse to review the eSBAR and transfer the patient without having to do a verbal handoff. This process was done with the caveat that it any time either the sending ED nurse or the receiving nurse needed or felt it was clinically relevant to have a conversation regarding the patient they must call for the information. By implementing this new streamlined process, the ready to move to the time the patient was received in the unit went from 84 minutes to a mean time of 49 minutes. After ten months, the mean move time had decreased to 47 minutes, and the improvement was considered sustained. The leadership of the organization made the decision to expand the use of the eSBAR to all inpatient units. Potts et al. concluded

that standardizing the tool for ED nursing handoffs to inpatient units could decrease overcrowding in the ED and the implemented in other practice settings for a safer and more efficient care transition.

A study by Zou and Zhang (2016) examined the implementation of a standardized nursing handoff tool to decrease nursing errors related to handoff. The study was a quasi-experimental design using a one group pretest-posttest on an inpatient medical unit. Pre-intervention data were collected for 12 months prior to implementing a standardized nursing handoff form (NHF). All 45 nurses on the unit received training in handoff protocol and were asked to use the form. Post-intervention data were collected. The incidence of nursing errors per 100 admissions was measured before and after the intervention of the NHF (Zou & Zhang, 2016).

The study involved 1,963 admissions during the pre-intervention and 1,970 admissions during the post-intervention periods. The implementation of the NHF was associated with a reduction in overall nursing error rates from 9.2, 95% confidence interval (CI) to 5.7, 95% CI per 100 admissions ($p < 0.001$). The total nursing errors decreased from 180 to 112. Handoff related error rates decreased from 2.7, 95% CI to 0.3, 95% CI per 100 admissions ($p < 0.001$). Zou and Zhang (2016) concluded that implementing an NHF standardized care and decreased nursing errors. Zou and Zhang also recommended that the tool is tailored to the specific unit, patients, and nurses' characteristics to have an impact.

Wentworth et al. (2012) conducted one of the only research studies to develop an eSBAR for handoff of patients. Wentworth et al. created an electronic tool to be used between the progressive care unit and the procedural cardiac areas. Using TJC requirements, a handoff workgroup determined what information would be in the eSBAR. Working with information

technology, the group developed a way to pull information into the SBAR so that the nurse would not have handwritten information on a paper SBAR. The staff took approximately one to six minutes to complete the handoff once it was implemented (Wentworth et al., 2012).

After implementation, the staff was given a survey for feedback. There was a 37% response rate. Of those nurses that completed the survey, they found the eSBAR to be valuable and worthwhile. The staff of the cardiac laboratories found the eSBAR much more efficient and valuable than previous handoffs processes. The tool allowed for ease of information sharing and decreased the amount of documentation during the handoff process. Limitations of this study were the small sample size, and very little quantifiable data was collected pre-study. Wentworth et al. (2012) noted the need to have measured the time it took to handoff the patient pre-implementation and then again post.

Communication. Streeter, Harrington, and Lane (2015) completed a quantitative study to identify communication behaviors associated with the shift to shift report by nurses. Streeter et al. looked at the roles of information giving, information seeking, and verifying and their relationship to socioemotional communication behaviors. This research was based on TJCs requirement to standardize handoff communication but did not supply how it was to be done. The handoff requirement by TJC did recommend that the handoff includes the opportunity to ask and respond to questions (TJC, 2014) but did not include communication behaviors, known as socioemotional communication behaviors, in their recommendation. This study lays the foundation for research to include socioemotional communication behaviors in the handoff process and training of those behaviors (Streeter et al., 2015).

Streeter et al. (2015) used a cross-sectional online survey factorial design questionnaire. Using an online nursing community, allnurses.com, a call for participation by nurses was

completed. The final sample of participants were 286 nurses that were randomly assigned to best incoming, worst incoming, best outgoing, and was still going questionnaires. The final sample size was 286 nurses, with 89% female and 11% male. The education level of the respondents, 48% held a bachelor's degree, and 37% held a graduate degree, while 20% had associate degrees, and 5% were diplomas. Both of these were a statistically significant difference in the general nursing population (Streeter et al., 2015)

In the socioemotional communication aspect of the study, the behaviors of the nurse, that were included in best practice are warm and friendly, understanding language, building a trusting relationship, creating an environment of comfort and relaxation, being open and honest, and showing compassion. Not only did socioemotional communication improve handoffs, but it also improved the quality of nursing lives at work. In this study, the responsibility for developing the relationship was identified as the incoming nurse. When looking at the interaction of quality and role, there were differences in how outgoing and incoming nurses reported on their use of socioemotional behaviors. When looking at worst handoffs incoming nurses perceive themselves as positive; outgoing nurses perceive themselves as negative. Even though the incoming nurse is responsible for creating a positive interaction, the handoff quality can deteriorate if the outgoing nurse creates a negative environment. In best practice, both incoming and outgoing nurses should establish professional and collaborative relationships (Streeter et al., 2015).

The limitations of this study included on any given shift, the nurse plays both roles, therefore, confusion regarding answering the question could prevail. Also, the study posted on a website creates a self-selected study population. The study also did not ask about the setting in which the nurse is practicing. There could be different responses according to practice areas such

as ED, nursing homes, or nursing units. The final limitation was self-reporting the worst, or best handoff can lead to bias on ratings of communication behaviors. Nurses who respond to the "best" may respond more favorably than the nurses who responded to the worst (Streeter et al., 2015).

Bunkenborg, Bitsch-Hansen, and Hølge-Hazelton, (2017) completed an ethnographic study to gain information about the practice and perceptions of communication interactions from the Intensive Care Unit (ICU) nurses to inpatient nurses. The design of this study was considered to be exploratory and qualitative. Bunkenborg et al. included 22 clinical handoffs, followed by five focus group interviews. Three of the focus groups were inpatient units, and two were the ICU nurses. This study aimed to consider how ICU nurses and inpatient nurses interact and communicate during clinical handoffs and how these handoffs are perceived (Bunkenborg et al., 2017).

Findings from observations included scenes during the handoff, which was the meeting and greeting ritual. In these interactions, the absence of everyday phrase greetings was noted, and often there was no verbal communication at all. The first words were related to where the handoff communication would take place. Another area was the lack of eye contact by nurses within the first 3 to 4 minutes of contact. At the end of the handoff process, the inpatient nurses had come to terms with taking over responsibility for the patient. The inpatient nurses often were ready to end the handoff, and that commented they could not cope with any more information (Bunkenborg et al., 2017).

The findings from the nursing focus groups included the perception that communication and documentation was a very demanding process. The expectations of the ICU nurses were very different from the inpatient nurses. Both believed it was the others that were in control of the

time to handover the patient. ICU nurses believe their discharge report was the primary source of information, while the inpatient nurses believed it was the medical record. The ICU nurses believed that every piece of information should be shared, while the inpatient nurses wanted only pertinent information that could not be found in the medical record (Bunkenborg et al., 2017). This study reinforces the need for common communication goals and collaborative efforts among the higher monitored unit nurses and the general medical-surgical units. Limitations of the study included that the study was only completed at one hospital, and the nurses were all experienced nurses. Having inexperienced nurses may give a different outcome to the behaviors experienced

Abraham et al., (2016) using a sequential conversational analysis (SCA) approach studied nurse handoff during shift report in a medical ICU (MICU) at an academic medical center. This study used a mixed method combining qualitative analysis with temporal pattern analysis to summarize data to open-ended approach and did not rely on assumed principles or statistical models to guide them. This approach, SCA, allowed the researchers to look at three inherent attributes of communication. Those attributes included structural properties and semantics, the temporal properties of the interactions, and breakdowns during the conversation and its relationships to the structural and temporal properties (Abraham et al., 2016).

The study was taken in three steps, data collection, coding by linguistics professionals, and communication events. The data collection process used audio recordings of verbal communication. These recordings were in a 16-bed MICU at an academic medical center. There were 16 nurses who participated over a two-month period with handoffs at 6 AM and 6 PM. There were 15 handoffs that were included in the study (Abraham et al., 2016).

This type of analysis of handoff was considered a new approach to studying handoff. The SCA showed differences between outgoing and incoming conversational patterns for nurses. The conversational pattern was broken down into two phases, pre-reflection and post inflection. The pre-inflection phase was the giving of information by the outgoing nurse. This included content such as drains and meds. The post inflection phase was when questions were asked, and dialogue and acknowledgment occurred by the incoming nurse. This usually included information about orders and psychosocial dynamics of the patient (Abraham et al., 2016).

In the disruption stream, it was noted that long monologues by outgoing nurse did not lead to more disruptions. A paper-based handoff tool was used by the outgoing nurse who would verbalize from a handwritten note on the tool that she had taken throughout the shift. The incoming nurse would write an update note on her own paper tool. The use of the tool was perceived to enhance nurses' ability to develop a more holistic approach to handoff (Abraham et al., 2016).

Handoffs are characterized in studies as usually one directional, whereas Abraham et al. (2016) show that nurse handoffs are relatively interactive. The term relative is used because the incoming nurse is receiving and acknowledging and not giving information, but there was interaction. TJC recommends readbacks for handoff, but there was no evidence in this study that it improves comprehension of patient information due to the narrative style of the outgoing nurse (Abraham et al., 2016).

There is a need for collaborative efforts to achieve a shared understanding during communication. Abraham et al. (2016) showed that the mean length of the turns, the amount of time each nurse spoke, for the outgoing nurse is greater than the incoming nurse. This incongruent distribution of collaboration skewed the responsibility to the incoming nurse and led

to a reduced coming understanding of the patient. Abraham et al. (2016) recommend using shorter turns to allow the incoming nurse to verify and clarify information.

There are several limitations to the study. The authors did not evaluate unresolved disruptions nor nonverbal cues. Due to limitations, they were unable to do a secondary analysis using subject matter experts such as nurses to evaluate the communication streams. Even though this is a shift to shift study the implications of communication can be used in any type of handoff, including interdepartmental. Patient handoff communication structure and limitations are the keys to understanding the breakdowns that happen in patient handoff (Abraham et al., 2016).

Limitations of Literature Review Process

There is very little quantitative data regarding the use of handoff in the research. This may be since handoffs do not lend themselves well to quantitative research. The qualitative research that was found explained how and why handoffs occurred but did not give insight into the best practice of what the tool should include. The qualitative research is focused mostly on the nurse shift to shift handoff (Abraham et al., 2016; Streeter et al., 2015; Zou & Zang, 2016). The interdepartmental handoffs are less represented with the only research found was from ICU to SDIU (Bunkenborg et al., 2017) and no research regarding the nurse handoff from ED to any inpatient unit.

Discussion

Conclusion of findings. Two main themes surfaced during the review of the literature in regard to the transfer of patients from the ED to the SDIU. The first, standardization, included using a specific tool to achieve standardization (Bakon & Millichamp, 2017; Stewart & Hand, 2017). Each of these studies showed consistency improved when a tool was utilized. The

consistent and standardized content allowed the nurse to give a structured handoff and decreased errors and errors of omission (Zou & Zhang, 2016)

The second theme, communication, looked at many avenues to improve interpersonal social interactions among nurses to improve communication breakdown in handoffs (Abraham et al., 2016; Streeter et al., 2015). These studies show that if the focus is only on the tool, then a key component, communication, will be missed. The behaviors or socioemotional aspect of the nurse behaviors must be addressed to ensure that communication is not broken down (Abraham et al., 2016; Streeter et al., 2015).

Utilization of findings in practice. The QI Project Manager chose to incorporate information into the lean process and educate the team on the use of patient-specific handoff tool, the best practice of communication, creating the environment of safe handoff and ensuring timing of handoff is appropriate. The four themes from Steward and Hand (2017) were the framework of the QI project. Bakon and Millichamp (2017) use of teams guided implementation. Incorporating the best practice of communication during the lean redesign ensures the new handoff process addresses all the challenges in the handoff process.

Summary

Communication and standardization are the hallmarks of improvement for the handoff process. The literature supports the use of a standardized tool such as SBAR for patient handoffs. Standardizing the handoff process can improve nursing communication and patient safety from the ED to SDIU. Through this literature review, the evidence for nurses to understand their roles as the giving of information and receiving information, allowing time for questions, and providing to minimizing interruptions can improve patient safety and care.

Chapter Three: Theory and Concept Model for Evidence-based Practice

Communication is a crucial component in the handoff of patient information. Passing patient information from the Emergency Department (ED) to the Stepdown Inpatient Unit (SDIU) requires a unique pattern of communication. Hilligoss and Cohen (2013) identified complications unique to interdepartmental handoffs. These complications are generally regarding negotiations and collaboration among staff. These types of complications compromise communication and therefore, safe and efficient handoffs. This chapter outlines the use of communication theory and lean models to ensure maximum information accuracy and efficiency in the patient handoff process.

Concept Analysis

Using a communication theory to address communication issues ensures that all aspects of the patient information would be shared consistently. In the handoff process communication of patient data is key to a safe and efficient handoff. Two fundamental concepts of this evidence-based project are standardized handoff and communication. These two concepts are closely related.

Standardization. Handoffs happen multiple times a day in the hospital setting. The Joint Commission (TJC; 2014) estimated that two-thirds of sentinel events per year are related to communication errors, including handoff. TJC (2014) defined handoff as the transfer and acceptance of patient care using communication. For this project, the TJC handoff definition was utilized.

Communication. Communication was defined by Claude Shannon and Warren Weaver in the Shannon Weaver theory of communication in 1948 as a mathematical design to improve technical communication. Weaver later formulated that the theory could be used in the

behavioral aspects as well as technical. The goal for both the technical communication and the behavioral was to identify the fastest and most efficient way to get a message from one point to another with minimum error (Ritchie, 1986). For this project, communication is deemed as the communication of patient information from the ED nurse to the SDIU nurse when transferring the patient while using the electronic situation background assessment recommendation (eSBAR) tool in the electronic health record (EHR).

Theoretical Framework

The Shannon Weaver theory of communication approached the issue of how to send the maximum information along with a channel and to measure the capacity to carry that information (Friske, 1990). This theory was developed to improve the telecommunications during World War II but later was used to describe all forms of communication (Shannon, 1948). Weaver (1953) in a second paper, showed that this theory could be applied to social science, but never intended for it to be a rigorous proof of the theory. From that definition, the use of the communication theory moved from electrical to include behavioral and has been used ever since (Ritchie, 1986).

The Shannon Weaver theory of communication consists of seven components, an information source, the source's message, a transmitter, a signal, and a receiver, the receiver's message, and a destination. Later noise was added as a component (see Appendix D; Gillespie & Schiffman, 2018). The sender is the person who wishes to communicate the message. This person is responsible for the contents and how the message is transmitted. The encoder changes the message or codes it so that it can be transmitted. Decoding is done by the receiver to reach its destination. Noise can be introduced at any point in the process to distort the message (Mohorek & Webb, 2015).

In 1954, Schramm adapted the Shannon Weaver theory of communication and added a feedback loop. This loop was considered an essential part of the human interaction interpretation of the theory. Considered the final step, feedback, or when the receiver asks for clarification from the sender. According to the theory, the success of communication is the ability to encode, decode, and the limit on the amount of noise that is present (Friske, 1990). Schramm later added a field of experience to represent how our experiences and the context of our understanding play a big part in the interpretation of information (see Appendix E; Wagner, 1994).

Gillespie and Schiffman (2018) critiqued the use of Shannon Weaver Theory of Communications and its implications for nursing. Through literature review and research, the authors found that communication breakdowns were the lead cause of medical errors and decreased patient satisfaction. Aligning with the Shannon Weaver theory of communication, they were able to examine how it supports communication in health care. One area focused on was the theory's ability to explain how communications works and how it fails. Using this theory, especially the noise aspect, analysis of communications breakdowns can happen (Gillespie & Schiffman, 2018).

Mohorek and Webb (2015) established a need for a consistent framework for handoffs. Using the Shannon Weaver theory of communication to analyze handoffs in healthcare critically, they completed a scholarly review looking at communication theories for possible conceptual frameworks. Mohorek and Webb concluded that the Shannon Weaver communication theory was one that should be used in health care handoffs. The clearly defined linear process makes it suitable to use in patient handoffs within healthcare. In their research, Mohorek and Webb found very little information on patient handoffs grounded in theory. There were no research studies to warrant evidence-based handoff strategies. Mohorek and Webb proposed using the conceptual

framework of the Shannon Weaver theory of communication to guide the development of future handoff evidence base research (Mohorek & Webb, 2015).

Mohorek and Webb (2015) used the framework of TJC recognizes that structured handoffs could improve patient care. Using the Shannon Weaver communication theory in identifying each component, they were able to break down the patient handoff into researchable components. From this, Mohorek and Webb (2015) concluded that the Shannon Weaver theory of communication would be suitable for a conceptual model for patient handoffs. This model could explain why messages breakdown at every point in the communication chain. Mohorek and Webb also recognized by using this model that research could be standardized in the field of patient handoff. They concluded that most of the research they found could fit into the model, therefore, making it a suitable framework for future research and patient handoffs (Mohorek & Webb, 2015).

Process Redesign

Combining the Shannon Weaver theory of communication and the lean process of define, measure, analyze, improve and control (DMAIC) model, this evidence-based project was implemented to increase the nurse's perception of the patient handoff process and decrease the number of safety events post transfer in the SDIU and decrease the time from bed assignment to arrival on the SDIU. The DMAIC model used in lean six sigma contains the five steps and multiple tools to accomplish redesign (Gillam, Nembhard, & Munoz, 2014). It was created to help organizations achieve operational efficiencies, financial effectiveness, and quality outcomes by focusing on customer value and efficiency. Using six sigma involves many statistical and performance improvement tools while following the five steps of the DMAIC model (Sehwail & DeYong, 2003).

Define. The first phase of DMAIC is to define the problem. This stage of the process is to understand the problem and to demonstrate the importance of the improvement requirements in measurable terms. This is where one defines the reason for action. During this stage, the stakeholders are chosen to represent their areas of expertise. In the handoff process, the stakeholders can vary from physicians, nurses, patients, and nonclinical staff such as unit secretaries. A project charter is used in the define phase to clearly outline the improvement activity and achieve agreement among team members (Pyzdek, & Keller, 2014).

Measure. After the team identifies and defines the problems; the current state must be outlined with the target state in mind. During this time, tools such as brainstorming can be employed. The use of the next phase, measure, is considered as the quality improvement (QI) team will agree on the measures to use both in the current state and then post-implementation. Decisions based on objective data is the cornerstone of six sigma and the lean process (Pyzdek & Keller, 2014). Working closely with existing information technology and the EHR data elements is an essential piece of measurement.

Analyze. In the analyze phase, the QI team will work to find the root cause of the problems. One tool used is called the Ishikawa Fishbone Diagram. The fishbone or the cause and effect diagram is used to find the gaps in the problem. By breaking it down into separate processes, the team can be guided in brainstorming to find the potential source of the variation in the process (Kumar & Steinebach, 2008). Another tool in the analyze stage is the process flowchart. The process flow allows the team to outline each step in the process to find waste and unnecessary steps that are currently in use (Pyzdek & Keller, 2014). All data is then taken to the next stage to design the process.

Improve. At this phase in the DMAIC model, the solution is being designed by the team. The goal of this stage is to design the new process so that it is ready for implementation. This design should take into consideration the gaps in the process, eliminating waste, and the team should ensure no new problem arises. The team would develop a new process flow chart, ensure the pre-implementation measures are ready and begin the rollout of the new process (Pyzdek & Keller, 2014).

Control. After implementation, it is essential to measure and ensure the process is achieving the results that are expected. The goal of the control phase is to hold the gains that are obtained in the new process (Kumar & Steinebach, 2008). This control phase would include documenting the new process and ensuring staff is educated. Comparison measurement would be taken at intervals of at least 30, 60- and 90-days post implementation to ensure that the process is achieving and accurately measuring what it is intended to do.

Practice Change Application

An EHR was implemented in September 2018 at the targeted project site that included an eSBAR embedded within the nursing documentation. The eSBAR contains data elements that are necessary for communication from one unit to another during handoff. Each hospital that implements the EHR has the ability to standardize the process on how this tool is used and which components are communicated. The seven components of the Shannon Weaver theory of communication an information source, the source's message, a transmitter, a signal, and a receiver, the receiver's message, destination, and noise were the framework of the define and measure phase during the lean process.

A QI team consisting of ED and SDIU Registered Nurses (RN), and Nurse Educators were formed to examine the process and develop a standardized handoff communication from

the ED to SDIU. The QI team utilizing the DMAIC model leveraged the use of the A3 tool (see Appendix A; UNC HealthCare, 2016) from lean six sigma to frame the five steps. The goal of the project was to standardize the eSBAR communication process of patient information during the handoff between the ED and SDIU nursing staff.

Summary

The Shannon Weaver theory of communication provides a framework of communication for both senders and receivers. The DMAIC model of lean six sigma provides the steps to redesign the nursing communication process. This DMAIC model guided the QI team in designing the eSBAR communication process to ensure that the correct, quick, and most accurate patient information is exchanged during the nursing handoff process.

Chapter Four: Pre-implementation Planning

Patient handoff and miscommunication cause 80% of serious medical errors as reported by The Joint Commission (TJC,2017). TJC Center for Transforming Healthcare demonstrated that creating a handoff communication tool can assist nurses in the patient handoff process. One organization was able to decrease the time it takes to move the patient from the Emergency Department (ED) to an inpatient area by 33% by creating a standardized handoff tool (TJC Center for Transforming Healthcare, 2014). An evidence-based practice (EBP) quality improvement (QI) project was planned for the implementation of a standardized communication handoff between the ED and the Stepdown Inpatient Unit (SDIU) nurses using the electronic situation background assessment and recommendation (eSBAR); therefore, increasing the safe handoff of the patient. The purpose of this chapter is to review the pre-implementation process, the EBP change, and project evaluation.

Project Purpose

The purpose of this EBP change was to implement a process of standardized patient handoffs between the ED and the SDIU. The project utilized a lean process redesign for how nurses completed handoffs between patients in the ED and the SDIU. A lean team was formed to redesign the process of the handoff. This team was composed of nurses from the ED and SDIU that were familiar with the current process. The team used the A3 methodology with the assistance of a trained facilitator and completed the new process redesign utilizing the eSBAR method. This team developed the guidelines for implementation. From there, the Project Manager (PM) utilizing the unit educators and members of the team educated the nursing staff on the new handoff process.

Project Management

Understanding an organization and their ability to adapt to change is important when implementing an EBP change project. The organization where the EBP project took place went through major changes in the year prior to the project. One half of the senior leadership had been replaced with the addition of a new Chief Executive Officer (CEO), a new Chief Financial Officer (CFO), and the vacancy of the Chief Medical Officer (CMO). These changes all played a role in how nursing perceived change. In the fall of 2018, prior to the project, a new information system was implemented and was considered as a significant disruptor for nursing staff.

Organizational readiness for change. Transformational leadership theory with exemplary actions is a theory that can be followed, especially during massive change. There are five practices of the transformational leader that supports change. Model the way, inspire a shared vision, challenge the process, enable others to act and encourage the heart, is the foundation of a transformational leader (Kouzes & Posner, 1987). Modeling or the act of demonstrating behaviors set the foundation for the leaders to drive change. Kouzes, Posner, and Beich (2010) state that clear championing of values is the single most important way for the leader to gain credibility with staff. Followers do not remember everything a leader says, but they do remember what a leader does.

This organization had the leaders in place that exemplify this behavior. The new CEO was a strong communicator and had clear expectations for his management staff. These behaviors included supporting one another and calling behaviors that are not supportive of excellent patient care. The Chief Nursing Officer (CNO) brings a strong nursing and leadership background that has gained significant credibility with the nursing staff. The CNO is visible and

supportive of staff. The Associate CNO was instrumental in the implementation of the new information system for the organization and supported staff during the change. As staff begins to embrace support from leadership, they also began to support improvement projects.

Inter-professional collaboration. The lean process by design develops an inter-professional collaborative team. The members of the lean team are considered to have the knowledge, skills, abilities, and personal attributes that make change successful. Identifying the right team is essential in process improvement. The successful team is an interdepartmental team that can break down barriers to achieve the results desired (Pyzdek & Keller, 2014).

The redesign of a handoff process required the formation of a lean team. The organization had been using the lean process for the last five years, and it is led by a certified lean facilitator. Fundamental to lean is the concept of teams. Teams are responsible for designing, completing, and improving their performances (Drotz & Poksinska, 2014). For the QI project, it is imperative to have team members closest to the process to ensure that the eSBAR handoff process will meet the needs of safe and efficient communication. The team utilized three staff members from both the ED and SDIU. Other members that played a vital role in the understanding of handoff was the nurse educators from the unit. Having key leaders on the team was necessary for the dissemination of information to staff and helped staff understand the decisions that were made and why. Another key team member was a staff member from the supervisor's bed control area. In the organization, these individuals are nurses that understand the placement of the patient and remove barriers for a smooth patient transfer and handoff. Finally, the leadership of each unit involved was necessary for successful implementation of the EBP change; the Director of the ED and the manager of the SDIU were included as advisory roles.

Risk management assessment. A strengths, weaknesses, opportunities, and threats (SWOT) analysis was performed to identify internal and external threats. Strong leadership of both of the units was a strength identified by the PM. Both units managers have been a part of the organization for over ten years, and the staff is dedicated to improving the processes. The Director of the ED is new within the last year but brings many strengths and ideas around support for nursing. In conversation with the PM, both managers were committed to improving the patient handoff process. Another area of strength was the existing structure of education supported by the Department of Nursing. Each unit has a dedicated nurse educator that is responsible for ensuring staff has the appropriate training and support when new processes are in place. One important area was the structured lean program that is supported by the organization. The lean program has been in place for the last eight years and has a history of successfully implementing positive changes that the staff are proud to display.

The weaknesses identified included the massive changes in the past six months makes it difficult to incorporate new processes. Change motivation needs to come within. It is evident prior to the project through the Hospital Survey on Patient Safety (HSOPS) data that the staff was not sure how the patient process works. With the changes in leadership and the changes in the information system, the prioritization of handoff as an issue was not clear. The PM and leadership needed to prioritize this project among many others.

The opportunities exist to not only work through the process of handoff to the ED and SDIU but to take the information from the lean project and disseminate it to all the staff before the next HSOPS survey. The community hospital scored below the 10th percentile in patient handoff during the 2016 HSOPS survey and is due for another survey in the fall of 2019. As TJC (2014) has recognized, poor patient handoffs have contributed to sentinel events throughout

the country; the opportunity to decrease sentinel events and improve patient safety can be accomplished through a standardized handoff process. Another benefit was the streamlining communication between the ED and SDIU, which allows for the patient transfer in a timely manner.

The threat to this project evolved around the many competing priorities for the staff and leadership. To minimize this risk, the PM worked with nursing leadership through their existing council structure to gain momentum to ensure the prioritization of this project. Each council played a role in promoting the handoff process. The Nursing Management Council supported the process to improve communication between the units. The Nursing Practice Council supported the standardization of patient handoff, and the Nursing Research Council was supportive of the quality project as an EBP effort.

Organizational approval process. The organization has a formal process using the Nursing Research Council to approve any research that involves nurses. This council supports EBP research in Nursing. The approval process included a review of the project proposal by the council, evaluation of whether it met the criteria for institutional review, and the ongoing reporting responsibility. The approval of the project after review from the Nursing Research Council was then forwarded to the Institutions Review Committee (IRC). The PM then reviewed with the acting chair of the institutions IRC for Human Subject Review, and it was deemed not to meet the definition of human subjects research as defined by the Department of Health and Human Services. It was also not considered clinical investigation as defined by the Food and Drug Administration and would not be subject to IRC oversite. The QI project was under the oversite of the Nursing Research Council, and the PM was responsible for communicating the ongoing project progress. This oversite was achieved by written and verbal

updates with ongoing meetings with the ED Director, SDIU manager, and the CNO and attendance at the Nursing Research Council.

Information technology. The concept of this QI project was moving from an unstructured patient handoff process to a standardized electronic process using the newly installed electronic health record (EHR). The ability to consistently give patient information has shown to improve communication among nurses (TJC, 2014). The new EHR allowed the PM to leverage the eSBAR as the communication tool for the new handoff process. Data collection regarding the timeliness of patient handoff was collected using Systems Applications and Products (SAP) business objects through the data warehouse within the information system structure. This data collection was developed after the PM was trained through the systems information management training, and access was granted through a review process. The safety event data was collected from the Quantros Safety Event Management System. For the perception survey, the use of a web-based software tool by SurveyMonkey was utilized both pre and post-implementation.

Materials Needed for Project

Being an internal hospital project, the cost of the QI program was minimal. The project material included flyers for information for both the ED and SDIU to announce when the educational session was held (see Appendix F). Educational material and a laminated project tip card were purchased by the hospital for each of the RNs on the units (see Appendix G). The survey of the staff was administered using free software via Survey Monkey. The PM used an encrypted laptop and an encrypted thumb drive to secure data collected from the hospital's information system and Survey Monkey.

Plans for Institutional Review Board Approval

The project site's Nursing Research Council gave the approval to submit the project proposal to the hospital IRC on October 10, 2018. The IRC gave approval for the exempt status on November 13, 2018 (see Appendix H). The East Carolina University (ECU) Institutional Review Board (IRB) verification process was completed on November 16, 2018. After completing the IRB QI/Program Evaluations Self-Certification tool, approval from the Faculty Lead was obtained. The ECU IRB processed designated the project as QI or Program Evaluation, and IRB review was not required on November 16, 2018 (see Appendix I).

Plan for Project Evaluation

Demographics. There were five demographic elements evaluated for this project. These elements were gender, age, years of nursing experience in a hospital setting, educational background, and job class. Descriptive statistics were used to measure the mean and percentage of the demographic data. Age and the years that the nurse had been working in the hospital setting was presented as a mean score with the range given. Gender was noted as a percentage of respondents based on male and female. Level of school was noted as a percentage of respondents based on Diploma/ Associate, Bachelors, Masters, or Doctorate in nursing. Job level was presented as a percentage of respondents regarding Licensed Practical Nurse (LPN), Clinical Nurse I, II III, or IV (see Appendix J).

Outcome measurement one: Timeliness of patient handoff. The first outcome was to decrease the length of time from the decision of bed assignment in the ED to arrival on the SDIU. The health care system currently collects data from the EHR and loads it into a database that is used for analysis. This database is called the data warehouse. The timeliness data was

collected using the data warehouse. This measurement assesses whether the new process was effective in decreasing the time for the patient in the ED by streamlining the handoff process.

Evaluation tool: Timeliness data. The time data were collected using the business intelligent objects tools with the health care system's data warehouse. This information included the time from the bed availability to the time the patient is transferred to the unit. The intent to admit order notifies the Bed Placement Department to coordinate finding the bed. The Bed Placement Department then notifies the ED when the patient's bed is ready, and the patient handoff process begins. The time when the patient arrives in the SDIU and the nurses electronically place the patient in the bed was used as the end of the process.

Data analysis: Timeliness data. Analysis of time data was compared pre and post-implementation. The times were evaluated by mean scores. Pre-data was collected in December 2018 and January 2019 prior to the project implementation. Post data was collected during April and May 2019, after the implementation of the new process. The mean time was reported and then evaluated by shifts and the days of the week.

Outcome measurement two: Number of safety events post transfer. The measurement of reported safety events six hours post-transfer from the ED to the SDIU was collected using the data collected in the Quantros Safety Event Management System. Pre-data was collected in December 2018 and January 2019 prior to the implementation. The safety event type coded during the admission were evaluated and compared to the number of safety events post-implementation. The post data was collected 60 days after the education for two months, April and May 2019. This data measures whether standardized communication can decrease the number of safety events reported.

Evaluation tool: Number of safety events post transfer. The safety event data was collected by the quality department using the Quantros Safety Event Management System. The data collected was coded by the staff reporting as an event type of admission, discharge, and transfer. The PM compared the medical record number and time of transfers; then counted the number of safety events that happened during the six hours post transfer.

Data analysis: Number of safety events post transfer. Analysis of the number of safety events was compared pre and post-implementation. The number of events and characteristics of the events that include a transfer plan or inadequate communication were compared. The events were evaluated by mean scores. Pre-data was collected in December 2018 and January 2019 and the post data collected in April and May 2019 (60 days post implementation of the new process).

Outcome measurement three: Perception of patient handoff. The survey of the perception of patient safety, HSOPS, focuses on the staff perception of safety (Agency for Healthcare Research and Quality, 2018). Four of the questions are related to the handoff process. These four questions were used to measure the perception of the handoff process by the nursing staff from the ED and SDIU. These questions are a subset of the HSOPS and are available for use at the hospital (see Appendix B).

Evaluation tool: Perception of patient handoff. Using the questions from the HSOPS survey, each nurse was asked to rate the four questions on the Likert scale related to handoff pre and post-implementation. The HSOPS survey is given voluntarily by hospitals across the US given annually between 2004 and 2012 and now is given every two years. It is a comparative database where the hospitals compare their scores to other hospitals. Comparatives can be done by regions, nationally and by individual states. The core of the survey is the perception of safety

by the staff. The survey is worded in both the positive and reversed wording in hopes to decrease bias (Agency for Healthcare Research and Quality, 2018).

The HSOPS survey has four statements that staff rate about handoff communication: *things "fall between the cracks" when transferring patients from one unit to another; important patient care information is often lost during shift changes; problems often occur in the exchange of information across hospital units; and shift changes are problematic for patients in this hospital*. These are answered in a five-point Likert scale format using "Strongly Disagree" to "Strongly Agree."

Two other questions are asked of the nurses to gauge their perception of the new process and give them the opportunity for feedback. The first question is gaging the civility of reporting: "When I give or receive report I feel the other person is treating me with respect." This question is answered on a Likert scale from "Strongly Disagree" to "Strongly Agree." The last participant question is open-ended to gain feedback that might be missed in the questions: "What information would you like to share regarding the handoff of patient care?"

Data analysis: Perception of patient handoff. The first set of questions regarding perception are the questions from the HSOPS survey. These four questions use the five-point Likert scale from "Strongly Disagree" to "Strongly Agree." The scores were calculated using the mean and standard deviation. This data was compared to the national survey completed in 2018 by hospitals across the United States with a bed size of 200 comparable to the community hospital. The next single question regarding how likely you are to change your practice of patient handoff used the five-point Likert scale from "Highly Unlikely" to "Highly Likely." This data was analyzed using a mean. The last open-ended question was analyzed for themes by the PM, and those themes were presented.

Data management. Being good stewards of data is the responsibility of any PM. Collecting data from electronic health records requires stringent adherence to the Health Information Portability and Accountability Act to include not only electronic data but also any printed patient information. In this QI project, the PM kept all printed data within the organization in a locked cabinet within the office of the PM. Downloaded electronic data was kept on the encrypted laptop and when needed was transferred to an encrypted thumb drive. The PM and faculty advisor, upon request, had access to the data. Confidentiality of the respondents was maintained by excluding all respondent information names, email addresses, IP addresses, and custom data from the electronic survey results. The data was deleted and destroyed after the completion of the project.

Summary

Poor patient handoffs can create gaps in information, errors of omission, and ultimately harm to the patient. Standardizing patient handoffs is a recurrent theme in the evidence-based literature, and with the onset of more robust information systems, nurses have an abundance of information about the patient. Using a standardized eSBAR, the patient handoff process is streamlined, and communication is improved

The EBP quality project addressed the challenge of standardizing the handoff communication and process. The use of the eSBAR within the electronic record and the lean principles to focus on processes were imperative to the success of standardizing patient handoff. Successful implementation laid the foundation for other units to use the principles of standardized patient handoffs for their patients. How the project was implemented is discussed in the next chapter.

Chapter Five: Implementation Process

The implementation of a standardized handoff process has been recommended throughout the literature; yet, today it remains as one of the main errors for patient safety (The Joint Commission [TJC] Center for Transforming Healthcare, 2014). The use of the lean process of define, measure, analyze, improve, and control (DMAIC) model allows nurses to collaborate to devise the best standardized process for the unit to unit patient handoffs (Pyzdek & Keller, 2014). After implementing the process changes on each unit, holding the gains of the new process requires ongoing monitoring by staff and leadership.

Currently, there is no standardized handoff process for patients between the Emergency Department (ED) and inpatient units at the community hospital where the quality improvement (QI) project was implemented. This evidence-based project focused on creating a standardized way of using the electronic situation, background, assessment, recommendations (eSBAR) handoff tool within the newly implemented electronic health record (EHR) for the ED to the Stepdown inpatient unit (SDIU). The purpose of this chapter is to outline the implementation process from the lean process development and educational program to the assessment of the QI project evaluation.

Setting

The setting for this QI project was a 345-bed community hospital with acute, outpatient, behavioral health, and rehabilitation services that is a nonprofit hospital affiliate of a larger health care system in North Carolina. The health system is a university-based system with seven community hospitals across one state. The community hospital joined the university-based system in 2014 to expand its resources and expertise in patient care for the surrounding community.

The QI project was implemented in the ED and the SDIU of the community hospital. In 2014, the hospital opened a new 66,000 square-foot ED. The ED has approximately 62,000 visits per year and is broken down into acute, pediatric, behavioral, and high intensity (the area with higher acuity patients) areas. The project excluded the pediatric and behavioral areas since these patients were not transferred to the SDIU. ED areas used for the project did include the acute area with 25 beds and a high intensity area with ten beds.

The SDIU is broken down into four areas called wings (North, East, South, and West). There are 20 beds in each of the four areas, and all areas receive patients from the ED and are included. The SDIU average census is 44 patients per day.

Participants

Registered nurses (RNs) are the ones responsible for handing off the patient from the ED to SDIU. The targeted project participants were 151 nurses from both the ED and the SDIU that were currently employed in December 2018. All RN participants were adults 18 years of age or older and included all gender and ethnicities. There were 83 nurses from the ED and 68 from the SDIU. Any RNs hired after December 2018 were excluded.

Recruitment

All RNs from the ED and SDIU were recruited through a blast email invite initially to participate in a pre-lean event survey. The initial survey was sent by email with instructions on how to take the survey and the need for their input into the patient handoff process (see Appendix K). The education and training were considered mandatory by the leadership of the units. A post-implementation email link to a final survey was sent to staff that participated in the pre-lean event survey at the completion of the project.

Implementation

The implementation process began when the Project Manager (PM) met with the Director of Operational and Service Excellence to formulate a plan for the lean process to address patient handoffs. An advisory leadership team, with the guidance of the certified lean facilitator, recommended that this team use an express workout, shorter meetings spread out over the project, to better accommodate the nursing staff. This express workout required the lean team to meet for four hours twice in the month of January. The second phase of the QI project was the implementation of the new handoff process. To accomplish this, the education of the staff and ensuring that the measurements established during the lean event were monitored. This section describes the step by step process the project used to accomplish the goal of standardizing the electronic patient handoff tool.

Lean process. The lean process began in December 2018 with an advisory group meeting made up of the leadership from the ED and SDIU. The goal of that meeting was to establish a compelling reason for the action and defining the scope of the project. From that meeting, the lean team was formed, and the first meeting was scheduled for January 2019.

The lean team met twice to devise the plan for standardizing the patient handoff. Prior to the second meeting, the PM distributed to the members' evidence-based practice (EBP) articles with a summary matrix to review. A summary of the pre-event survey was compiled for the team to review. The team created a process map of the current process describing the current handoff process in detail (see Appendix L). The lean team used this time to brainstorm ideas and review the EPB articles provided by the PM for best practices to incorporate into the new patient handoff process using the eSBAR tool.

The second meeting focused on the target state and the new process that the team developed. This time was used to specify the desired change and outcomes to measure. After reviewing the best practices from the EBP articles, the team mapped out the new process. During that time, a gap analysis of the current state and the future state to identify areas of improvement was created. Brainstorming was used to develop the best education process for the staff. During these meetings, the lean team was able to identify problems with communication, consistency, and timing of handoffs. The eSBAR from the current EHR was introduced, by the PM, to the team to frame the new process.

The advisory leadership team met after the lean team created the recommendations and devised an implementation plan. After recommendations from the lean team, the education program was developed by the PM and approved both units leadership. The plan included reasons for the change, benefits of the change, the strength of the evidence, examples of how to execute, and the actual tools to use. The nurse educators worked with the PM to develop the schedule of educational meetings for the ED and SDIU staff.

Staff education. To disseminate the education of the new process, the PM attended both the ED and the SDIU educational meetings in February 2019. During this time, a PowerPoint presentation of the project, the goals of the new process, and a laminated pocket tip card (see Appendix G) on how to call report were reviewed. The tip cards were given to the nursing staff and distributed on the units. The staff had time to ask questions, go over the new tool in more detail, and were given patient scenarios on how to do reports. As the tool was being used, staff were encouraged to evaluate the tool and its effectiveness. This feedback would then be considered and implemented for future effectiveness.

Go-live. After the education of both units in February 2019, the Director of the ED and the Nurse Manager of the step-down unit chose to implement the new process on February 18, 2019. The PM and the Nurse Educators rotated during shifts to assist staff if there were any questions regarding the new handoff process. The staff were receptive to the new process and provided continuous feedback through written feedback on the units, and verbal follow up with the PM.

Plan Variation

The implementation varied only in one aspect. The original implementation plan had no newly hired nurses after December 31, 2018, included in the nursing staff surveys. The project leadership asked that all nurses hired after December 31, 2018, be added. The project team was interested in the feedback that "fresh new eyes" had on the handoff process. These individuals had an uncorrupted view regarding the handoff process, which would be important for the evaluation of the handoff tool.

Summary

Processes for patient handoff between the ED and SDIU was highly variable, unreliable, and caused the clinical handoff to be a high-risk area for patient safety. A lean team developed a newly devised process to establish a consistent method for using the eSBAR as the communication tool to achieve consistent patient handoffs experiences. By standardizing the handoff, critical information is exchanged, and the staff established consistent expectations regarding communication between the units. Findings from the QI project analysis is presented in the following chapter.

Chapter Six: Evaluation of the Practice Change Initiative

A community hospital in eastern North Carolina identified the issue of not having a standardized patient handoff from the Emergency Department (ED) to the Stepdown Inpatient Unit (SDIU) was causing the patient harm due to several errors in care caused by poor communication. An evidence-based quality improvement project that incorporated a lean process was designed and completed. Education regarding the use of the electronic situation, background, assessment, and recommendation (eSBAR) tool was implemented. Participants included the nursing staff from the ED and the SDIU. The Evaluation of the Patient Handoff from ED to SDIU Pre- Event Survey (see Appendix K) and the Evaluation of the Patient Handoff from ED to SDIU Post-Event Survey (see Appendix M) were sent to all Registered Nurse (RN) staff from both units. The purpose of this chapter is to analyze the findings from project implementation.

Participant Demographics

The collection of demographics were obtained using the Demographic Data Survey (see Appendix J). A total of 140 RNs were employed in the ED and the SDIU during the implementation of the project. All nurses were required to participate in the project, but the completion of all surveys were voluntary with 54% (n = 28) from the ED, and 46% (n = 23) from SDIU. The response rate was 36% (n=51). Of those that responded to the survey, 71% (n=36) identified as female and 29% (n=15) male. With the increasing number of international nurses, the lean team wanted to understand if there was an influence from the international nurses. The question “which race/ethnicity best describes you” was added to the Demographic Data survey. The respondents fell into the following categories, 2% (n=1) were multiple ethnicity, 2% (n=1)

Asian/Pacific Islander, 18% (n=9) were Black/African American, and 77% (n=39) were White/Caucasian.

The mean years of nursing experience in the hospital setting were 9.1 years, with a range of 0.75 to 35. Of the respondents, 50% (n=25) had less than five years' experience. The level of school fell into the following percentages 51% (n=26) were Diploma/ Associate, 41% (n=21) Bachelors, and 4% (n=4) held a Master's degree.

At the community hospital as an RN, there is an opportunity for a clinical ladder advancement. There are four levels within the ladder, Clinical Nurse I through Clinical Nurse IV. The job level of the participants was 20% (n=10) were Clinical Nurse I, 65% (n=33) were Clinical Nurse II, 8% were Clinical Nurse III, and 6% (n=3) were Clinical Nurse IV.

Intended Outcomes

There were three defined outcomes of this evidenced-based practice (EBP) implementation. The first outcome was to decrease the length of time from the decision of bed assignment to the time the patient is in the bed. The second outcome was to decrease the number of patient safety events related to patient handoff. Moreover, the third outcome was to increase the positive perception of patient handoff by the nursing staff from the ED and SDIU.

Timeliness of patient handoff. The first outcome, timeliness of patient handoff, was to decrease the amount of time from the decision of bed assignment in the ED to arrival on the SDIU. By streamlining the handoff process, the time it takes to move a patient from the ED to the SDIU should decrease. The time of bed assignment and the time the patient arrived on the SDIU was recorded in the electronic health record (EHR). The pre-intervention data was collected from December 1, 2018, and January 31, 2019. This data was compared to the post-intervention data on April 1, 2019, through May 31, 2019.

Number of safety events post transfer. The second outcome, the number of safety events post transfer, was collected using the safety event management system of the hospital. During the EBP implementation, there was a significant change in the way safety events were reported. Prior to the implementation of the new EHR, the staff was able to report adverse safety events directly from their EHR. After September 22, 2018, the staff were no longer able to report directly from the EHR, and overall reporting decreased by 37.17% from the previous year's average.

Perception of patient handoff. The four questions from the Hospital Survey on Patient Safety (HSOPS; see Appendix B) were used as both the pre and post survey. The HSOPS tool has four statements rated by staff about handoff communication: things "fall between the cracks" when transferring patients from one unit to another; important patient care information is often lost during shift changes; problems often occur in the exchange of information across hospital units; and shift changes are problematic for patients in this hospital. These four questions use the five-point Likert scale from "Strongly Disagree" to "Strongly Agree" (Agency for Healthcare Research and Quality [AHRQ], 2018). The scores were calculated using the mean and standard deviation (SD).

This HSOPS data was compared to the national survey completed in 2018 by hospitals across the United States with a bed size of 200 comparable to the community hospital. To compare, AHRQ used positive percentile data. The percentile shows the distribution of hospital scores within the specific component. The HSOPS survey is broken down into 10^{th}, 25^{th}, 50^{th}, 75^{th}, or 90^{th} percentile. (AHRQ, 2018).

Findings

Timeliness of patient handoff. Table 1 highlights patient handoff data. There were 721 transfers from the ED to SCIU that were included in the pre-intervention data (December 1, 2018, through January 31, 2019). The mean time from bed assignment to arrival was 66 minutes (SD = 39 minutes). There were 670 transfers during the post-implementation phase (April 1, 2019, through May 31, 2019). The mean time from bed assignment to arrival was 69 minutes (SD = 41 minutes).

Table 1

Pre and Post Implementation Mean and Standard Deviation

	Number of Transfers	M	SD
Pre-Implementation	721	66	39
Post-Implementation	670	69	41

Note. Mean (M) and Standard Deviations (SD) in minutes.

The days of the week were compared in both pre-implementation and post-implementation to see if there were any variations in the days of the week. Friday, Saturday and Sunday had 10% fewer transfers than Monday through Thursday with the transfer mean time of 59.5 minutes (SD = 32 minutes; n=273). The transfer mean time for Monday through Thursday was 70.5 minutes (SD = 42 minutes; n= 448), showing a slower transfer time during the week than on the weekends. Post-implementation data showed similar trends with Friday, Saturday and Sunday having 16% fewer transports than Monday through Thursday. Unlike pre-implementation, there was very little variation in the mean time during post-implementation. The mean time for Monday through Thursday was 70 minutes (SD = 42 minutes; n=427) and for Friday through Sunday was 68 minutes (SD = 32 minutes; n=243).

The data was then compared by shifts with the day shift being defined as 0645 to 1915 and the night shift from 1916 to 0644. The day shift transferred 14% more patients than the night shift with a mean transfer time of 77 minutes (SD = 41 minutes; n=387). The night shift mean transfer time was 54 minutes (SD = 33 minutes; n=334). During post-implementation, the day shift transferred 12% more patients than the night shift with the mean transfer time of 77 minutes (SD = 45 minutes; n=379). The night shift mean transfer time was 59 minutes (SD = 33 minutes).

Throughput in the ED, the time from the bed assignment until the patient arrives on the unit, was one of the defined outcomes of this project. This process has many factors, one of which is the streamlining of the handoff. As noted in Table 1, this outcome was not impacted by the implementation of the eSBAR. The lean team recognized, during the post-implementation debrief, that implementing the eSBAR does not improve the handoff process. Potts, Ryan, Diegel-Vacek, and Murchek (2018) developed a handoff process through a quality initiative using the eSBAR to improve throughput from the ED to the inpatient units. This process change placed the responsibility for the inpatient nurse to review the eSBAR and transfer the patient without placing a phone call. This change in the handoff process did improve throughput times. The Project Manager (PM) made the recommendation to evaluate this no phone call process as the next cycle of refinement for the eSBAR process and is being evaluated for implementation in a future lean project.

Number of safety events post transfer. There was no handoff event data available for evaluation due to a change in the process of reporting. Prior to the implementation of the new EHR, the events were reported directly from the previous EHR. This process now requires the nurse to report via the hospital intranet, causing the community hospital to note an overall

decrease in event reporting. There were no handoff events reported both pre or post-intervention. This lack of reporting does not mean safety events did not happen during the handoff process change; it does mean that overall reporting is down due to the new reporting process. From the finding of no events, leadership was notified of the trend by the PM and a communication plan to improve reporting was implemented by the Quality Department. The plan included moving the access to the Safety Event Management System to the front page of the intranet for easier access of staff, educating staff on how to create an event, and monitoring the number of events to track improvement.

Perception of patient handoff. Data were collected pre and post-intervention using the HSOPS data tool (see Appendix B) regarding the RN's perception of patient handoff. The questions are negatively worded, the higher the score, the less favorable result. The four questions use the five-point Likert scale from "Strongly Disagree" (1) to "Strongly Agree" (5).

The first question, *things "fall between the cracks" when transferring patients from one unit to another*, had a pre-intervention mean score of 3.98 (SD = 0.9; n=51). The post-intervention mean score was 3.93 (SD = 0.81; n=45). This score showed very little change between the nurse's perception from pre and post-intervention.

The next three questions showed some movement of improvement in the perception of handoff. The second question, *important patient care information is often lost during shift changes*, had a pre-intervention mean score of 3.83 (SD = 1.03; n=53) and post-intervention score 3.52 (SD =1.07; n=46). This score showed an 8% increase in positive perception of handoff by the nursing staff.

The third question, *problems often occur in the exchange of information across hospital units*, pre-intervention mean score was 3.79 (SD = 0.96; n=52). Upon review the post-

intervention mean score was 3.67 (SD = 0.97; n=46). This score noted a 3% increase in positive perception.

The final question, *shift changes are problematic for patients in this hospital*, had a pre-intervention mean score of 3.87 (SD = 1.13; n=53). When reviewed the post-intervention mean score of 3.60 (SD = 1.03; n=48). This score resulted in a 7% increase in positive perception.

Percentiles were used to compare the data to the national survey. The AHRQ compares hospital scores by the percent positive across the nation. To calculate the percent positive score for the handoff questions, the percentage of "Strongly disagree" and "Disagree" are combined and then compared to the national database. All scores were below the 10th percentile of the national survey (AHRQ, 2018). For the first question, *things "fall between the cracks" when transferring patients from one unit to another*, the percent positivity score was 13.7%, which falls below the 10th percentile of respondents in the AHRQ (2018) HSOPS survey of 37%. The second question, *important patient care information is often lost during shift changes*, scored a 13.2 % positivity score well below the 53% of the national average. The third question, *problems often occur in the exchange of information across hospital unit's,* positive percentage was 15.4%, while the national average was 47%. The final question, *shift changes are problematic for patients in this hospital*, scored 10.9% with the national average of 48% (AHRQ, 2018; see Table 2).

Table 2

AHRQ Positivity Score Comparison

	Survey	AHRQ 2018 200 Beds	National Average
1. Things "fall between the cracks" when transferring patients from one unit to another	13.7%	37%	42%
2. Important patient care information is often lost during shift changes	13.2%	50%	53%
3. Problems often occur in the exchange of information across hospital units	15.4%	42%	47%
4. Shift changes are problematic for patients in this hospital	10.9%	44%	48%

Note. Survey is the results of Evaluation of the Patient Handoff from Emergency Department to Stepdown Inpatient Unit Post-Event Survey (see Appendix M).

At the end of the project survey, the participants were asked an open-ended question, "*What information would you like to share regarding the handoff of patient care?*" This data was analyzed for themes. The most common theme expressed was around the process of making the patient handoff phone call for a report. The ED nurses had difficulty contacting the inpatient nurses, and the inpatient nurses were frustrated that the ED nurses did not understand that they were unavailable. The ED nurses did standardize to the use of the eSBAR as the reporting tool when calling the transfer handoff to the SDIU.The inconsistencies of how to contact each other was identified as one of the gaps in the lean event. This gap will be addressed in the recommendation by the PM to evaluate the "no phone call" future lean project to the nursing leadership of the community hospital.

Another theme noted was the inconsistencies of inpatient orders. Admitting physicians are supposed to place orders in a sign and held status in the EHR when admitting an ED patient and only releasing what needs to be completed in the ED. This process lets the inpatient nursing staff know what needs to be completed on the floor. Re-training of the Hospitalist staff was recommended by the lean team but has not taken place.

Summary

Standardizing patient handoff communication is important in the safety of patients transferred from the ED to SDIU. This EBP quality improvement project intended to standardize the patient handoff using the existing eSBAR in the EHR. The time decision of bed assignment in the ED to arrival on the SDIU did not improve. The positive perception of nursing staff improved but remains low. Continuing to seek ways to better improve the patient handoff experience from the ED to the inpatient units remains a priority for this community hospital. In this EBP change project, the stated outcomes were not met. Waldrop, Caruso, Fuchs, and Hypes (2014) recognized that in some projects outcomes are not met, but that most attempts at quality improvements can be evaluated and lead to future advances in patient care.

Chapter Seven: Implications for Nursing Practice

An essential aspect of any scholarly project is the discussion and dissemination of practice implementation. The framework used in the Doctor of Nursing Practice (DNP) program is the Essentials of Doctoral Education for Advanced Nursing Practice offered by the American Association of Colleges of Nursing (AACN; 2006). These eight essentials are competencies focused on improving health and care outcomes within nursing practice (AACN, 2006). The patient handoff evidence-based practice (EBP) quality improvement project included a scholarly approach and a commitment to advancing nursing practice to improve the quality of communication provided within the targeted project site. The purpose of the project was to implement a standardized handoff process from the Emergency Department (ED) to the Stepdown Inpatient Unit (SDIU). This chapter focuses on how this EBP change project aligns with the eight essentials and outlines the practice application-oriented implications for the future of nursing.

Practice Implications

Essential I: Scientific underpinnings for practice. The first essential focuses on the science of nursing practice. The use of science to address future practice issues requires a foundation of knowledge. The DNP graduate is the key to guiding nursing practice and expanding the discipline through the translation of EBPs. The DNP essentials prepare the graduate to integrate theory and nursing science into nursing practice (AACN, 2006).

The implication for the practice of nursing was to streamline the patient handoff and standardize the handoff tool. Bakon and Millichamp (2017) showed that standardize handoffs assist the nursing staff in providing effective and complete handoffs. This project focused on using the electronic situation, background, assessment, and recommendation (eSBAR) tool

within the current electronic health record (EHR) for standardization. This standardization resulted in improved communication between nursing. The DNP graduate should be guided by proven evidence to improve the eSBAR and work with the staff to continuously improve the handoff process.

Essential II: Organization and systems leadership for quality improvement and systems thinking. The second essential concentrates on organizational leadership and the focus of promoting patient safety and excellence in practice. Proficiency in quality improvement approaches, policy changes, and sustainability of the change is a characteristic of the DNP graduate to provide excellent nursing care (AANC, 2006). This leadership ability requires an extensive understanding of systems and change theory to accomplish this organizational change.

The eSBAR has all the components for the handoff of patient care. The hospital where the EBP project was implemented had within four months converted to a new system-wide EHR. The eSBAR for ED patients was readily available for the ED nurses but not for the inpatient nurses. To have the eSBAR available to the inpatient nurse when using the EHR, a technical system change had to be approved at the organizational system level. To accomplish this, each hospital within the system had to agree. As a leader, this process required getting buy-in from other hospitals, creating the business case to the change and presenting at the system level. This change impacted not only the organization of the project but the system as a whole. It was approved on June 10, 2019 and will be implemented in October 2019.

The implication for nursing practice would be the effective and efficient use of the eSBAR for the patient handoff. Leadership abilities to effect system changes have an important implication for the DNP graduate when implementing process change for patient handoffs. Hilligoss and Moffatt-Bruce (2014) showed that implementation of a checklist requires process

changes and changes in a long-standing social aspect of the verbalization of handoff report. This socialization requirement involves major organizational changes and leadership support, or there is a risk of little change in the process. Hilligoss and Moffatt-Bruce (2014) also noted that a checklist like the SBAR could give staff a false sense of safety; therefore, be misused and requires leadership buy-in and effective guidance to facilitate the change.

Essential III: Clinical scholarship and analytical methods for EBP. Translation of research into practice requires the DNP graduate to design and evaluate quality improvement methods when applying research. Understanding and translating research into practice requires the DNP graduate to be grounded in EBP methodologies. The third essential prepares the DNP graduate to analyze research and literature critically, simulate it for practice, and implement within their organization. Part of this simulation is learning to evaluate, design, and implement quality improvement projects to promote safe, timely, effective, and efficient patient outcomes (AACN, 2006).

The EBP quality improvement project focus was the standardization of the handoff tool used by the ED and SDIU nurses. Using a lean project team and following the lean process of define, measure, analyze, improve and control (DMAIC) model, this evidence-based project was implemented to decrease the time from bed assignment to arrival on the SDIU, decrease the number of safety events post transfer in the SDIU, and increase the nurse's positive perception of the patient handoff process. The DMAIC model included identifying gaps within the current process. One gap identified was that the inpatient nurses not having the eSBAR required significant system changes that were led by the Project Manager (PM). Pyzdek and Keller (2014) describe that the DMAIC process has two functions; to implement top-level goals and

gather problems and opportunities from the bottom up. These functions require the DNP graduate to be capable of using leadership skills in working with lean teams.

Another gap identified during the DMAIC lean project included that there was no minimal data set of patient handoff data identified by the staff. Research from Bunkenborg, Bitsch-Hansen, and Hølge-Hazelton (2017) identified the differences in nursing units for the requirement during handoff. Bunkenborg et al. reinforce the need for common communication goals and collaborative efforts among the higher monitored unit nurses and the general medical-surgical units. Johnson, Jefferies, and Nicholls (2012) completed an observational study of 195 patients notes to derive a framework for the minimal data set for patient handoff. Johnson et al. then compared and validated this with nurses. The implication for nursing practice includes using the framework and working with the information technology departments to develop a minimal data set for the eSBAR to ensure consistent communication of information.

Essential IV: Information systems/technology and patient care technology for the improvement and transformation of healthcare. The proficient use of technology to support and improve healthcare systems and patient safety is the hallmark of essential four. Having the skill set to design, select, evaluate, and use information systems in order to improve quality care delivery models is essential for the DNP graduate (AACN, 2006). Using the EHR to extract, analyze, and trend data was extremely vital to the implementation and data collection process of this project.

The basis of the EBP project was the use of the EHR standardized eSBAR. The evaluation of how nursing was using the new EHR and reeducating the use of the existing tool was the core of the project. The DMAIC lean project identified gaps in the way the eSBAR tool that was being used. The implication for nursing practice includes developing the eSBAR tools

for staff to use to improve communication and handoff of the patient from unit to unit. Wentworth et al. (2012) studied the use of the electronic information tools in patient handoff and concluded that the tool allowed for ease of information sharing and decreased the amount of documentation and confusion of staff during the handoff process.

Essential V: Healthcare policy for advocacy in healthcare. Healthcare policy change is the catalyst for change in the healthcare industry. Engagement in the process is vital for DNP graduates to influence that needed change. Essential five focuses on the leadership role of the DNP prepared nurse to recognize, influence, and implement policy change as they see needed. That policy change can span from the facility, a health care system, or at a national level. Engaging proactively in all the aspects of policy change is the responsibility of the DNP graduate (AACN, 2006).

The handoff process evaluated in this EBP project has not changed in nursing practice, even with the increased use of EHR's. It has been the responsibility of the transferring nurse to either go with the patient and verbally handoff or call on the phone for decades. The practice implication for nursing would be to reevaluate the phone call process and change nursing policy to incorporate the use of the EHR. Potts, Ryan, Diegel-Vacek, and Murchek (2018) developed a handoff process using eSBAR to improve patient flow from the ED to the inpatient units by eliminating the phone call. Potts et al. placed the responsibility of the inpatient nurse to review the chart and call if there were questions.

Essential VI: Interprofessional collaboration for improving patient and population health outcomes. Collaborating with and facilitating interprofessional teams is the core of essential six. The DNP graduate is prepared to lead interprofessional teams in the analysis of complex organizational changes that facilitate change in healthcare. The DNP graduate plays a

central role in building teams, participating in teams, and leading teams as needed (AACN, 2006). Facilitating the lean process is an area where the advance practice nurse leader on a team can produce effective change.

Literature shows that handoffs are usually performed within intraprofessional teams, such as nurse to nurse. Bunkenbog et al. (2017) show that even within a discipline like nursing, the culture between units can be so different that communications can breakdown. Implications for nursing would include further research on improving communication between units. Research to better understand what information is needed for a smooth unit to unit handoff can help develop a minimal data set needed for patient handoff.

The next implication for nursing is to build better collaboration within nursing services. Abraham et al. (2016) characterized the handoff as a two-way interactive process. If the social norms are not understood or common communication patterns are not met, communication breaks down. One recommendation from the lean team was to have a shadowing program between inpatient nursing and ED. Dunn, Alexander, Manas, Sorkin, and Finnegan (2018) implemented a nurse shadowing program after a survey showed that the nursing within their organization scored low on an item regarding how they treated each other with respect. Dunn et al. realized that some of their unresolved issues had escalated in their departments and addressed it with a shadowing program. The pilot program included eight nurses and was so successful they are expanding it to other units. The outcomes included a better understanding of each other roles, finding differences within the documentation and the need to expand to management level.

One area that was considered outside of the scope of the project but essential to the handoff process was using the EHR tool appropriately. The admission orders are placed by the admitting physicians in a sign and held status. The admitting physicians at the community

hospital were not following this process and releasing them after they are placed. This process lets the inpatient nursing staff know what needs to be completed on the floor. The implication for practice includes collaboration with the Hospitalist group to ensure proper training and understanding of the process.

Essential VII: Clinical prevention and population health for improving the nation's health. The DNP graduate engages in leadership skills to integrate EBP in the prevention of errors that cause patient harm. Essential seven concentrates on risk reduction and prevention of harm to the patient. The DNP graduate is prepared to analyze the environmental data, develop, implement, and evaluate processes to improve the healthcare system as a whole (AACN, 2006).

The cost of medical errors was over one billion dollars for the United States, with the median cost close to $1000 per patient (David et al., 2013). Part of those errors happens because of the poor handoff processes. The Joint Commission (TJC; 2017) estimated that two-thirds of the sentinel events are related to communication errors that include handoffs. The implication for nursing practice is to utilize the lean process to evaluate and implement change to improve the handoff process and decreasing negative patient events.

Essential VIII: Advanced nursing practice. The DNP graduate is responsible for advancing the practice of nursing through the implementation of EBP. The eighth essential encourages mentorship, guiding, and supporting nurses to achieve excellence. Overall it is important for the DNP graduate to be the lead in influencing health care outcomes (AACN, 2006).

Implications of the EBP project encompass the need for nursing leaders to support the ongoing efforts in communication and tool development for patient handoffs. The need for nursing to communicate effectively during the handoff of the patient remains a critical task.

Streeter, Harrington, and Lane (2015) looked at the roles of information giving, information seeking, and verifying and their relationship to socioemotional communication behaviors. The positive behaviors of the nurse, that were included in best practice are warm and friendly, understanding language, building a trusting relationship, creating an environment of comfort and relaxation, being open and honest, and showing compassion. It is the role of the DNP graduate to mentor nurses in a positive relationship building to improve handoff communication (AACN, 2006).

Summary

The practice-focused terminal degree for nursing, the DNP, concentrates on implementing EBPs into the clinical environment (AACN, 2006). Evaluating and implementing quality improvement activities that improve patient safety, strengthen nursing practice, and improve operational efficiencies are part of the skills of the DNP graduate. This EBP change incorporated all eight DNP essentials during project planning, implementation, and evaluation.

Chapter Eight: Final Conclusions

The Doctor of Nursing Practice (DNP) education curriculum prepares the nurse to promote innovation, direct patient safety initiatives, and implement evidence-based practice (EBP) quality improvements (QI) projects. In the past two years, a community hospital in eastern North Carolina experienced several sentinel events and low perception of patient handoff by staff that indicated a need to evaluate the handoff process from the Emergency Department (ED) to the inpatient stepdown unit (SDIU). Using the lean process and EBPs, a QI project to improve handoff from the ED to the SDIUwas addressed. The project resulted in the community hospital learning of gaps in knowledge of how the current tool for handoff was used in the electronic health record (EHR). Although the QI project did not result in improvements in the stated outcomes, the staff learned how the new handoff tool worked and is poised for future improvement. This chapter summarizes the findings of the EBP project.

Significance of Findings

Using the framework of lean, define, measure, analyze, implement, and control (DMAIC), a data-driven quality strategy was used to improve the handoff process. During the lean process of analyze, gaps in the handoff process were found. The three overall gaps identified were communication, lack of an agreed upon minimal data set of information during handoff, and the handoff phone call process. The communication process was one of the biggest obstacles to overcome. The lean team identified the electronic situation, background, assessment, and recommendation (eSBAR) as the standardized tool to use, but the inpatient nurses did not automatically receive that tool when gaining access to the EHR summary page. Not having the tool required each SDIU inpatient nurse to add this to their EHR summary page manually. This need to manually add the tool was escalated to the health care system

information system department where they incorporated feedback from the lean team. This feedback included having just one eSBAR instead of the existing two, streamline the data for ease of reporting and giving access to all registered nurses for the entire health care system.

The area where improvements were not made centered around the process of giving and receiving the report. The current process remains where the ED nurse generates a call to the receiving nurse. The lean team requested that until there was a consistent, standardized handoff tool for both ED and inpatient nursing, changes to the process could be detrimental to the patient. The lean team and staff did get a better understanding of the handoff process, and a recommendation to look at redesigning this process is slated for a future lean project. The process of communication now includes all ED staff using the eSBAR to gain knowledge of the patient information and calling report to the inpatient nurses from that tool. The lean team also created a minimal data set to use while giving a report (see Appendix G).

Project Strength and Limitations

Strengths of this project included the solid leadership of the units that participated. The managers of the units were strong support, and the staff were ready to see improvements in handoffs. The other strength noted was collaboration and support from all areas of the organization. The Education Department comprised of nursing education staff worked with the Project Manager (PM) to ensure all the steps and education was in place.

Another strength is the existing structured lean program. The lean program has been in place for the last eight years. In the last year, there were eight different lean projects at the same time the facility implemented the new EHR. The lean program is led by a strong facilitator that gets the buy-in from the staff and executives.

An identified limitation was the starting of the project just three months after the total conversion to a new EHR. With this enormous change, the staff was just getting their understanding of how the system worked and was not sure how the eSBAR functioned. Even though this was considered a limitation, doing the lean project allowed the staff to analyze the handoff tool, begin utilizing the tool and begin to look at the process within the EHR.

Another noted limitation was being a part of a larger health care system; the team was unable to make quick changes that were needed to test a new process. The community hospital has accepted this lack of agility in place of the new her with the added benefits of the newly integrated patient record. The new EHR has additional patient data from other facilities that were not available in their previous system allowing the nurses and providers to see the complete patient record.

Another recognized limitation was that this project was implemented during the winter months, while the patient census was high. Both project units (ED & SDIU) remained in the high census with the flu season at its peak. The PM spoke with many of the staff during implementation, and they were feeling the stress of not only high census but also short staffing as they were also experiencing shortages because of the flu. Implementation in lower census timeframe would be optimal for future cycles of eSBAR refinements.

Project Benefits

One of the benefits of implementing a lean project so soon after the installment of a new EHR is that it allowed the staff to get a better understanding of how the EHR tools are used. Implementation of a new EHR changes many of the existing processes, including the tool used for patient handoff. The team's recognition of the problem of the inpatient nurse not inherently having access to see the eSBAR tool was a eureka moment. One staff member during the lean

team meeting stated, “No wonder I do not see what the ED nurse is talking about, I do not see it!” Even though it was labor intensive to ensure all inpatient nurses on the stepdown unit got the eSBAR, it proved to be a useful tool for them. The lean team recommended that the PM carry forward to the health care system that all inpatient nurses need access to eSBAR. The entire health care system is incorporating this change in their October 2019 upgrade.

The next benefit was gaining a greater understanding of the handoff process. The lean team reviewed the EBP project by Potts, Ryan, Diegel-Vacek, and Murchek (2018) that showed that the elimination of the phone call from the ED to the inpatient care unit did not cause harm to the patient. The lean team was interested in the process but felt that they were not ready to move to that step. This no phone call process is recommended for a future project. The results of the project have demonstrated that there is still work to be done both in the community hospital and the health care system as a whole regarding patient handoff of the ED patient.

Recommendations for Practice

This EBP change project cultivated awareness that there are many more opportunities to improve the handoff process from the ED to the SDIU. One area that was identified as a recommendation is being implemented by the health care system, adding the eSBAR to all inpatient nursing templates in the EHR. This lack of accessibility to the tool decreased the opportunity of the inpatient nurse to use a valuable tool for handoff. The community hospital staff can support and work with the system to improve the existing eSBAR and ensure it is available to all nurses. The information and feedback from the lean team can only enhance eSBAR.

The next recommendation is to take the knowledge from the first project and continue to improve the handoff process with innovated ideas. Nurses need to begin using the tools

available to them, like the eSBAR, to improve the handoff process. This community hospital and the health care system should evaluate the implementation of the no phone call handoff to increase nursing satisfaction and improve the throughput of patients.

Final Summary

The EBP change project was a recommendation from the community hospital after two sentinel events and low scores on the perception of patient handoff in the 2016 Agency for Healthcare Research and Quality survey (AHRQ; 2018). The standardization of the handoff tool was identified by the Joint Commission (TJC; 2017) as the key to structured handoffs and decreasing patient harm. Through a lean process, gaps to the handoff process were identified, the staff was instructed on how to use the eSBAR tool, an implementation was conducted, and recommendations were made. There is much more to be done, and this project was the beginning of making changes in the handoff process to not only the targeted project community hospital but also the remainder of the health care system at large.

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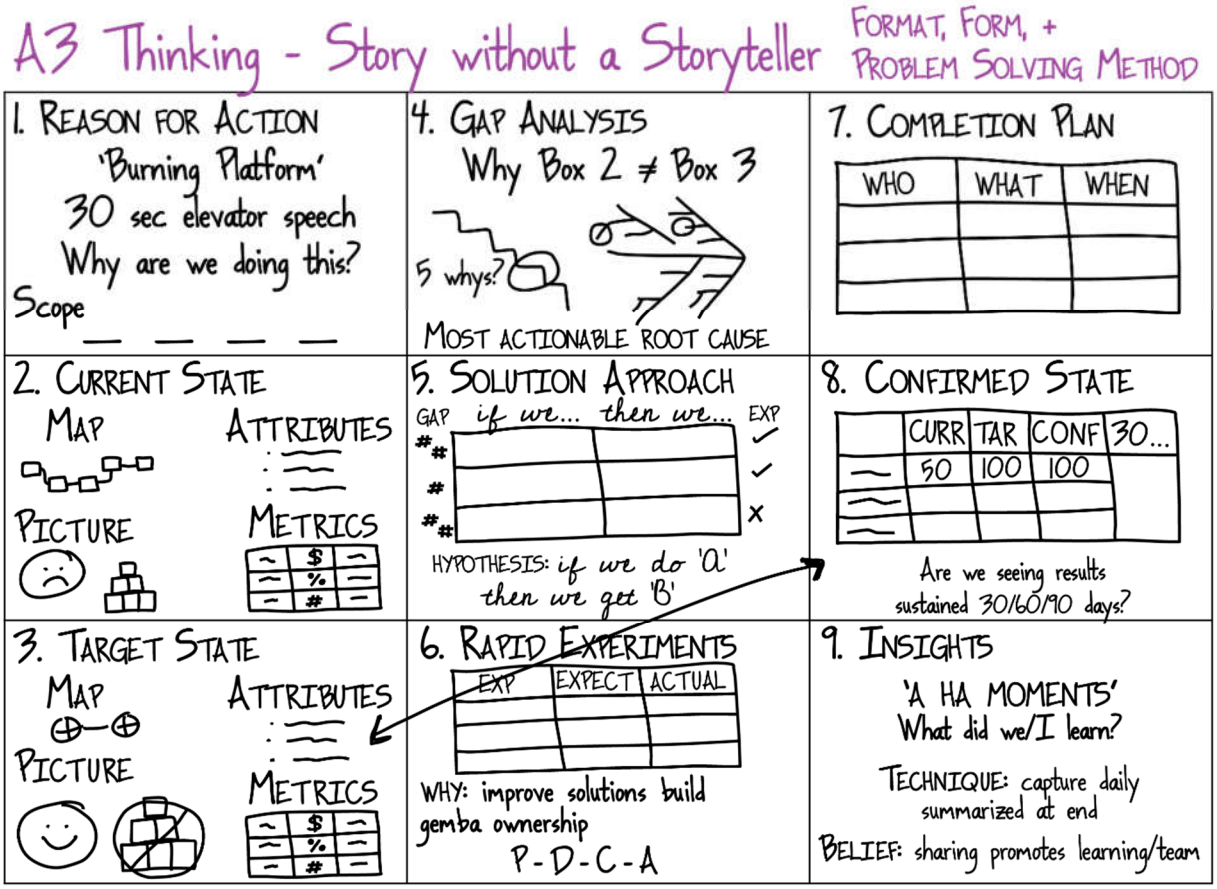
Appendix A

A3 Thinking – Story without a Storyteller



UNC Health Care, 2016

Appendix B

Four HSOPS Statements Regard Patient Handoff and Transitions Questions

1 = Strongly disagree 2 = Disagree 3 = Neither 4 = Agree 5 = Strongly agree

Coded Statement	Statement
F3	Things “fall between the cracks” when transferring patients from one unit to another
F5	Important patient care information is often lost during shift changes
F7	Problems often occur in the exchange of information across hospital units
F11	Shift changes are problematic for patients in this hospital

Agency for Healthcare Research and Quality, 2018

Appendix C

Evidence Matrix

Article (APA Citation)	Level of Evidence (I to VII)	Data/Evidence Findings	Conclusion	Use of Evidence in EBP Project Plan (Include your evaluation, strengths/limitations, and relevance)
Abraham et al. (2016) Characterizing the structure and content of nurse handoffs: A sequential conversational analysis approach	VI	A mixed method approach that integrated qualitative and conversational analysis with quantitative sequential pattern analysis – characteristics of communication patterns showed relationships of underlying verbal content with the emphasis on interaction relevant to the incoming and outgoing nurse.	This approach is new in analyzing communication in the nurse practice. They identified nuances of communication that have an impact on patient care. This study can be used to improve training and content for handoff tools.	A new way to approach the evaluation of handoffs is needed. Sequential Communication Analysis needs to be used in different environments to find a framework of evaluating handoffs. Even though this was shift to shift case study the tools will be valuable in evaluating interdepartmental handoffs. Limitations include transferring the knowledge to use in the interdepartmental QI
Bakon et al. (2017) Optimising the emergency to ward handover process: A mixed methods study.	VI	A mixed method approach including focus groups to develop handoff tool from ED to inpatient units. Implementation of handover form from the ED to IP. Form was perceived as clear well designed and easy to navigate.	Standardize handover form should be structured and provide standardize content.	Even though the QI project will not be developing a handoff tool the steps in this collaboration can be used to validate the eSBAR in the electronic record. Using the process will be valuable. Limitation include that it is a paper form and not electronic as in the case of the QI project

Bunkenborg et al. (2017) Handing over patients from the ICU to the general ward: A focused ethnographical study of nurses' communication practice	VI	Exploratory and qualitative analysis focused on ethnographic culture and people at 350 bed university hospital in the ICU to inpatient handoff for two months randomly selected ICU nurse to observe in transfer of the patient to an inpatient unit. Findings included meeting and greeting normal social behaviors did not happen, body language of inpatient unit nurses were not inviting, when leaving the unit, the IP nurses were overwhelmed with the amount of information given by the ICU nurse.	Communication and collaboration of shared goals were not present. There was lack of time by the IP nurse to reflect and reach shared goals with the ICU nurse.	Can use the concept of developing shared goals with the staff when evaluating the handoff process as a best practice. Limitation is that this is a transfer from ICU, the dynamics of ED will be different.
Hand et al. (2017) SBAR, communication, and patient safety: An integrated literature review.	V	Systematic Review of 2012 – 2017. 21 articles were reviewed for this article. Found that SBAR creates a common language, builds confidence of staff, improves efficiency and effectiveness and is well received among staff.	They concluded that the SBAR tool was simple to use, effective in standardizing communication and can improve patient safety.	This information directly relates to the eSBAR that will be used in the QI project. Limitation of the study is that none of the SBARs reviewed were electronic.

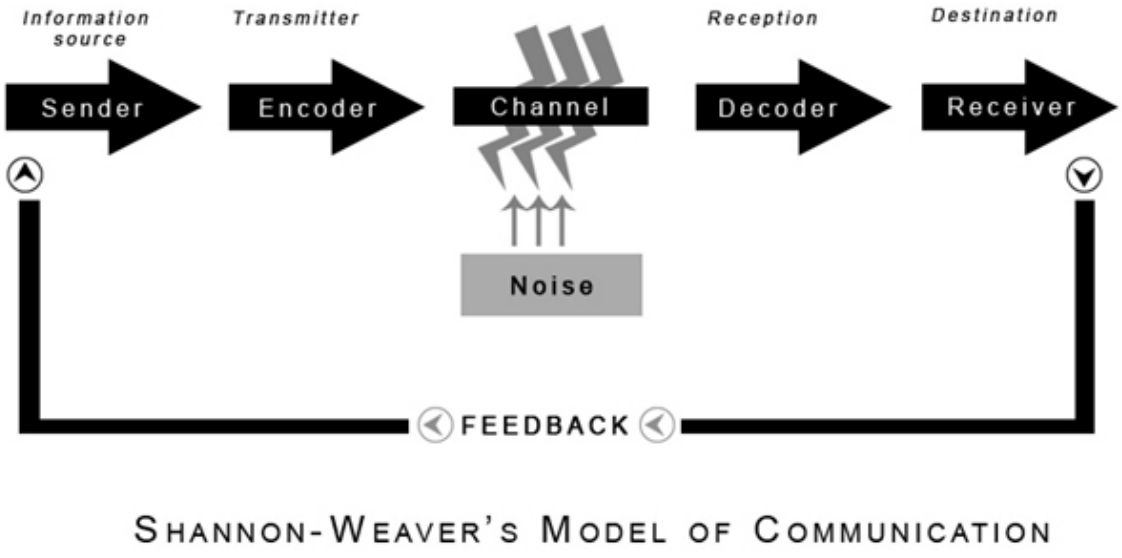
Potts, L., Ryan, C., Diegel-Vacek, L., & Murchek, A. (2018). Improving patient flow from the emergency department utilizing a standardized electronic nursing handoff process	VI	The quality improvement initiative measured the time the patient was ready to move from the ED to the inpatient unit. By using the eSBAR and changing the workflow they were able to decrease the time by 41.7%.	Standardizing the handoff process by using existing electronic health record improved turnaround time for patients from the ED to the inpatient unit.	This QI project reflects the outcome that will be implemented at the community hospital. This article will be used by the lean team while evaluating the handoff process.
Wentworth et al., (2012)	VI	This descriptive study was based around creating an eSBAR for a specific patient population. The only measurement that was used was a perception survey by staff with a response rate of 37%. Of those responding the results were positive	Implementing the eSBAR was novel at the time of the article. They concluded that the tool was reliable and standardized handoff between the units.	Even though this is out of the timeframe of the search it is one of the only research articles regarding electronic use of SBAR. The implementation team can use some of the techniques of disseminating the information and lessons learned regarding the changing communication practice once a tool is electronic.
Zou et al. (2015) Rates of nursing errors and handoffs-related errors in a medical unit following implementation of a standardized nursing handoff form	III	Prospective intervention study of inpatient medical unit. Completed pre-test and posttest: Nursing errors decreased from 180 to 112. Overall nursing error rates decreased from 9.2 to 5.7. Handoff related errors	Implementation of a standardized handoff form was associated with reduction in total nursing errors and handoff related nursing errors.	Will consider the outcome measures during this study for measures of improved nurse handoff from ED to SDIU.

		decreased from 2.7 to 0.3. Rates of delayed or omission of medication or test decreased from 0.5 to 0. Pressure ulcer rates decreased from 0.7 to 0.3. Inappropriate care of lines rates decreased from 1.3 to 0. Rates of falls decreased from 0.2 to 0 all over 100 admissions.		

Note. Evidence in support of redesign of the handoff process from the Emergency Department (ED) to the Stepdown Inpatient Unit (SDIU). QI = Quality Improvement; ICU = Intensive Care Unit; SBAR = Situation, Background, Assessment, and Recommendations; eSBAR = electronic SBAR.

Appendix D

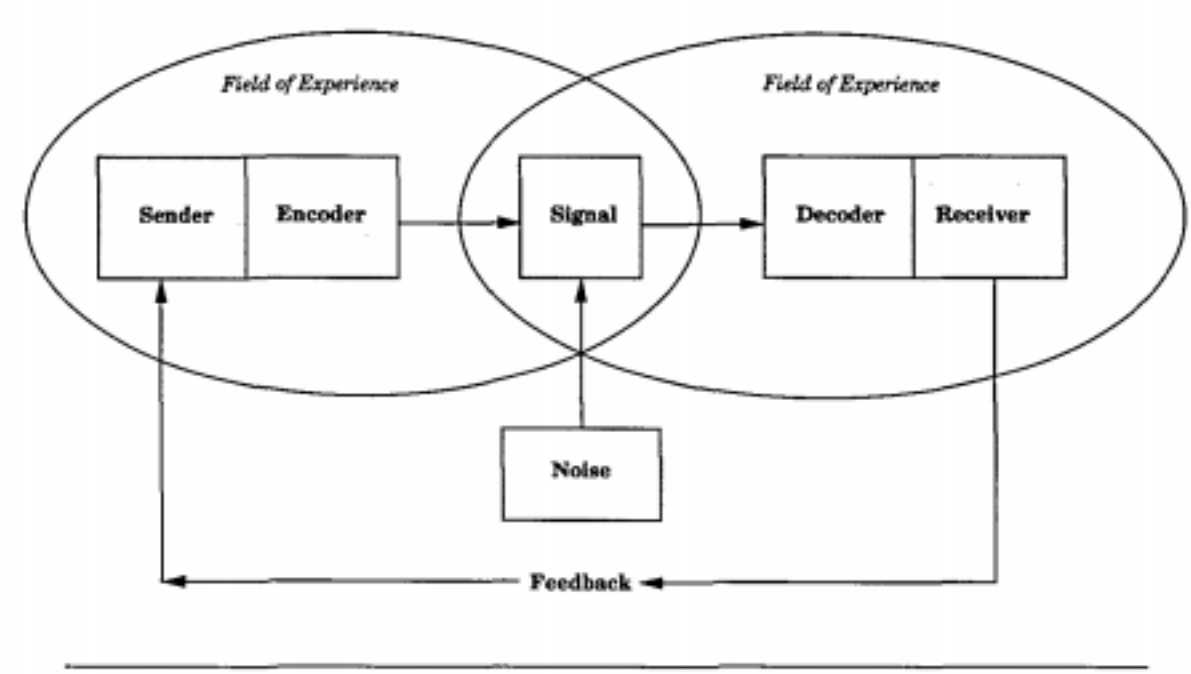
Shannon-Weaver Model of Communication



(Gillespie & Schiffman, 2018)

Appendix E

Schramm addition to the Shannon Weaver Theory



(Wagner, 1994)

Appendix F

Education Sessions for Patient Handoff Process

Patient Handoff from ED to CPSU

ED SBAR

February 18, 2019

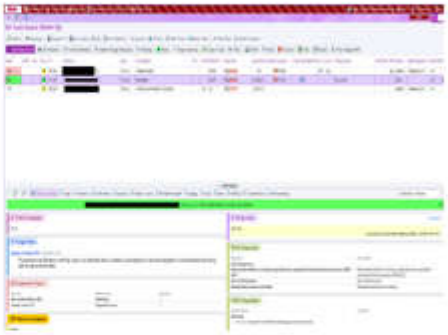
Introduction

ED SBAR is a common tool in Epic@UNC that creates a structured form of communication that enables patient information to be consistently and accurately transferred between the ED and the inpatient units. Nash UNC Health Care had experienced patient safety issues in response to missed information in patient handoffs. We also scored in the bottom 10 percentile on the hospital patient safety survey regarding the perception of what we as staff perceive as a good patient handoff. We transfer many patients daily from the ED to the inpatient units and standardizing on the ED SBAR helps staff to anticipate the information needed and formulate information with the right level of detail.

Next Steps

Starting February 18, 2019, the ED RN's will use the EDSBAR to communicate patient transfers to the Inpatient Units. The CPSU Unit will use the same tool to prepare for the handoff. After 4 weeks the Patient Handoff Lean team will meet to incorporate feedback from both units.

ED: Where is the ED SBAR?



ED Track Board, Choose Patient and Show Report

CPSU: Where is the EDSBAR?

Choose NSHH Emergency Department, Find Patient, Double Click and Look under Summary

Feedback:

- Notebooks placed in the Unit you can write in them
- Survey coming out in March
- See your Nurse Educators Morgan or Maggie and look for Mary Jo Nimmo rounding on unit for questions or feedback

Appendix G

Laminated Project Tip Card

Appendix H

Organization Institutional Review Committee Approval Letter

[redacted]

November 13, 2018

Michelle Cosimeno, MSN, RN, NE-BC
Vice President and Associate Chief Nursing Officer

[redacted]

Dear IRB Members,

After reviewing the proposed quality project, *"Standardizing Patient Handoff of the Boarded Emergency Department Patient to the Inpatient Unit"*, presented by *Mary Jo Nimmo*, I have granted authorization for *Mary Jo Nimmo* to conduct a quality improvement project at our *Nash Health Care Systems* organization.

I understand the purpose of the project is to standardize the handoff process from the Emergency Department to the Stepdown Inpatient Unit using the electronic situation background assessment and recommendation tool. *Mary Jo Nimmo* will conduct the following quality activities, lean process with staff nurses and education on the outcome of the tool. It is understood that this project will end no later than May 3, 2019.

I have indicated to *Mary Jo Nimmo* that my company will allow the following research activities:
Utilize staff from Emergency Department and Cardiac Pulmonary Stepdown Unit in a lean project to define and streamline the handoff process of the boarded Emergency Department patient to the Stepdown Inpatient Unit.

To ensure that the employees are protected, *Mary Jo Nimmo*, has agreed to provide to me a copy of any East Carolina's IRB decision, consent document before she *recruits* participants at [redacted] *Mary Jo Nimmo*, has agreed to provide a copy of the study results, in aggregate, to our college.

If the IRB has any concerns about the permission being granted by this letter, please contact me at the phone number listed above.

Sincerely,
Vice President & Associate Chief Nurse Officer
Michelle Cosimeno MSN, RN. NE-BC
Printed Name

11/13/18
Signature /Date

[redacted]

Appendix I

IRB Approval for QI Study East Carolina University

Based on your responses, the project appears to constitute QI and/or Program Evaluation and IRB review is not required because, in accordance with federal regulations, your project does not constitute research as defined under 45 CFR 46.102(d). If the project results are disseminated, they should be characterized as QI and/or Program Evaluation findings. Finally, if the project changes in any way that might affect the intent or design, please complete this self-certification again to ensure that IRB review is still not required. Click the button below to view a printable version of this form to save with your files, as it serves as documentation that IRB review is not required for this project. 11/16/2018

Powered by Qualtrics

Appendix J

Demographic Data

Demographics Information of Nursing Staff Respondents

1. What is your gender?
   - Female
   - Male

2. Which race/ethnicity best describes you? (Please choose only one.)

   - American Indian or Alaskan Native
   - Asian / Pacific Islander
   - Black or African American
   - Hispanic
   - White / Caucasian
   - Multiple ethnicity / Other (please specify) _____

4. How many years have you been a nurse in the hospital setting? _____

5. What is the highest level of school that you have completed?
   - Diploma or 2-year college degree (ADN)
   - 4-year college degree (BSN)
   - Graduate-level degree (MSN)
   - Doctor of Nursing Practice

6. Which of the following best describes your current job level?
   - LPN
   - Clinical Nurse I
   - Clinical Nurse II
   - Clinical Nurse III
   - Clinical Nurse IV

Appendix K

Evaluation of the Patient Handoff from ED to SDIU Pre- Event Survey

Lean Handoff Pre-Event Survey of ED and CPSU Staff

Evaluation of the Patient Handoff from ED to CPSU

What Unit to do you currently work on?

- ☐ CPSU
- ☐ Emergency Department

Lean Handoff Pre-Event Survey of ED and CPSU Staff

ED Staff Response

Do you currently use any electronic tool when giving report? If so which one?

- ○ Yes
- ○ No

If yes which tool?

What information do you consider vital to give to CPSU nurse when transferring a patient from the ED to CPSU

- ☐ Chief Complaint
- ☐ ED Disposition
- ☐ Medical History
- ☐ Social History
- ☐ Vital Signs
- ☐ Lines/Drains/Airways
- ☐ Orders
- ☐ Other

Other (please specify)

Appendix K (cont.)

Evaluation of the Patient Handoff from ED to SDIU Pre- Event Survey

What information would you like to share regarding your experience with the handoff of patient care that might improve the process?

Lean Handoff Pre-Event Survey of ED and CPSU Staff

CPSU Staff Response

What information do you consider vital when receiving the handoff of a patient from the ED?

- Chief Compliant
- Vital Signs
- ED Disposition
- Lines/Drains/Airway
- Medical History
- Orders
- Social History

Other (please specify)

What tool do you use to record your handoff?

- Paper
- Epic - I look at the chart while receiving report
- None

Do you feel you have time to ask questions during the handoff process?

- Yes
- No
- Sometimes

Lean Handoff Pre-Event Survey of ED and CPSU Staff

Appendix K (cont.)

Evaluation of the Patient Handoff from ED to SDIU Pre- Event Survey

Comments

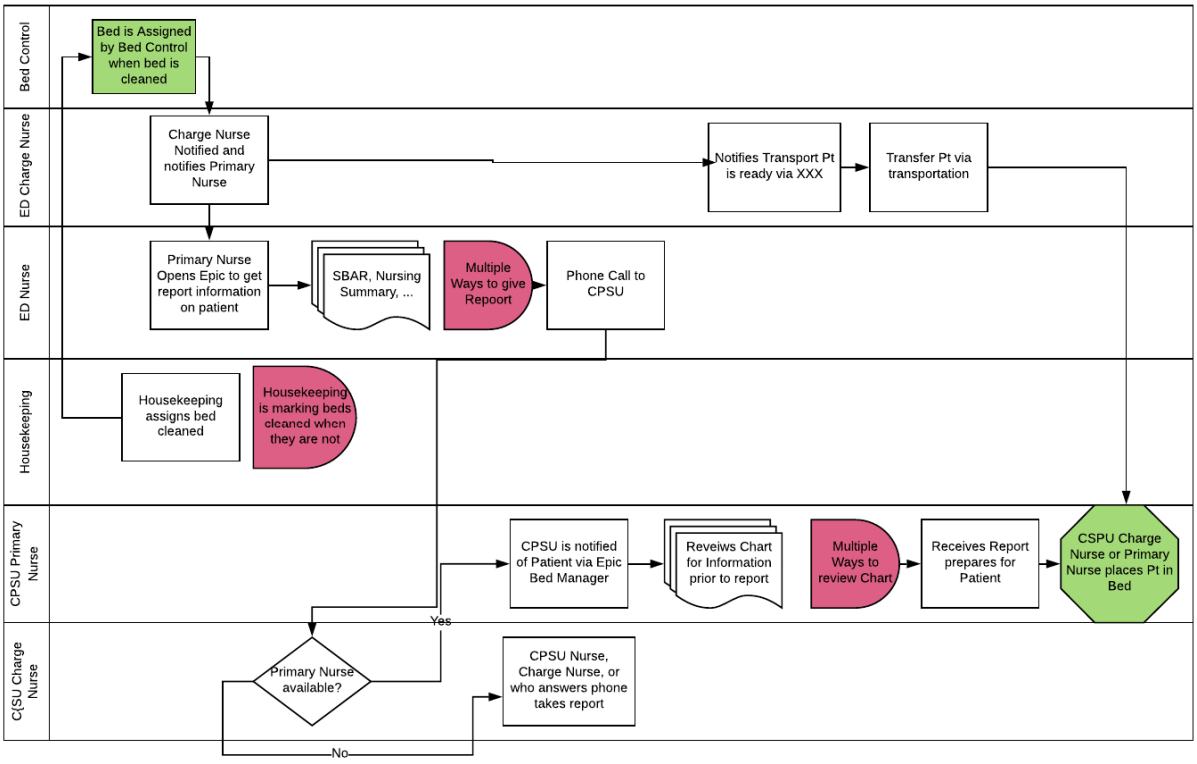
Please rate the following:

	Strongly disagree	Disagree	Neither	Agree	Strongly agree
Things "fall between the cracks" when transferring patients from one unit to another	○	○	○	○	○
Important patient care information is often lost during shift changes	○	○	○	○	○
Problems often occur in the exchange of information across hospital units	○	○	○	○	○
Shift changes are problematic for patients in this hospital	○	○	○	○	○

Any other information that you want to share to improve the handoff process?

Appendix L

Current Handoff Process Map



Current Process Flow of Patient Handoff from ED to CPSU

Appendix M

Evaluation of the Patient Handoff from ED to SDIU Post-Event Survey

Patient Handoff From ED to CPSU

Evaluation of the Patient Handoff from ED to CPSU

1. What is your gender?

- Female
- Male

2. Which race/ethnicity best describes you? (Please choose only one.)

- American Indian or Alaskan Native
- Asian / Pacific Islander
- Black or African American
- Hispanic
- White / Caucasian
- Multiple ethnicity / Other (please specify)

3. How many years have you been a nurse in the hospital setting?

4. What is the highest level of school that you have completed?

- Diploma or 2-year college degree (ADN)
- 4-year college degree (BSN)
- Graduate-level degree
- Doctorate of Nurse Practice

5. Which of the following best describes your current job level?

- LPN
- Clinical Nurse I
- Clinical Nurse II
- Clinical Nurse III
- Clinical Nurse IV
- Management

Appendix M (cont.)
Evaluation of the Patient Handoff from ED to SDIU Post-Event Survey

6. Please rate the following:

	Strongly disagree	Disagree	Neither	Agree	Strongly agree
Things "fall between the cracks" when transferring patients from one unit to another	○	○	○	○	○
Important patient care information is often lost during shift changes	○	○	○	○	○
Problems often occur in the exchange of information across hospital units	○	○	○	○	○
Shift changes are problematic for patients in this hospital	○	○	○	○	○
When I give or receive report I feel the other person is treating me with respect	○	○	○	○	○

7. Did you use the EDSBAR for patient handoff?

○ Yes

○ No

If No why not?